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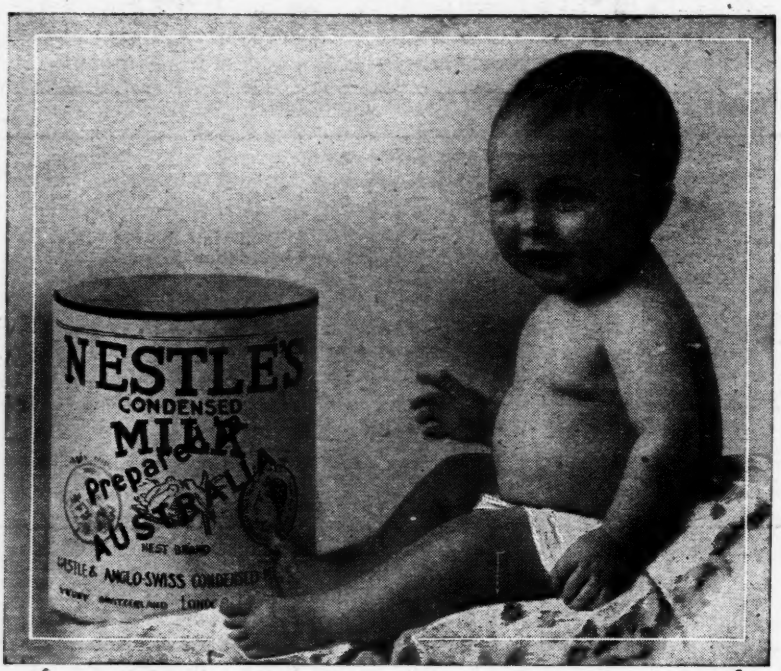

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THE MEDICAL JOURNAL OF AUSTRALIA.

VOL. I.—7TH YEAR. SYDNEY: SATURDAY, MARCH 20, 1920. No. 12.

TOXÆMIA IN EPILEPSY.

By **Peter Lalor, M.B., Ch.B. (Melb.),**
Acting Medical Superintendent, Mental Diseases Hospital, New Norfolk, Tasmania;
and
George Haddow,
Laboratory Officer, Mental Diseases Hospital, Tasmania.

It is not maintained in this paper that the sole cause of epilepsy is some toxin; it is admitted that there are other causes of non-essential and essential epilepsy, but the majority of cases coming under the heading of what is known as idiopathic epilepsy, it is held, are grouped under the third class mentioned below.

Exciting Causes.

Spratling's classification of the three main exciting causes of the epileptic state are herewith given and it is the third of these three great causes that this paper is particularly written to discuss.

> First.—Epilepsy of a certain type is due in some cases to a visible organic lesion in the brain, as a cerebral hæmorrhage, gross or minute; to a trauma, or to a tumour. This type is that in which most frequently the mental life of the patient is preserved for years after the onset of the disease and there may be no impairment of the psychic life during the entire lifetime of the individual; this is really not essential epilepsy.
>
> Second.—Epilepsy, mostly of an essential nature, is sometimes due to "a potentiality" that exists in the brain at the moment of birth, and that under proper stimulation or irritation may induce convulsions at the moment of birth, immediately after birth, a few days, weeks or months after birth, or that may have no influence or effect in that direction whatever until the proper stimulation is applied in adult life. The epilepsy due to such causes is more nearly essential, or idiopathic, than the type of epilepsy described under the first heading.

This is more often the type met with in congenital mental deficiency with epilepsy, as seen in the Idiot Asylum, Kew, and is frequently complicated by and associated with congenital syphilitic infection.

> Third.—Epilepsy of a certain type is due in most cases to a condition in which deep-seated errors exist in the fundamental principles of nutrition, in metabolism, in the ultimate or primal cell life, in the last phase of nutrition, or may be the very first phase of nutrition, and which errors are so serious from time to time and at irregular intervals that a positive universal toxic condition exists, and which toxic condition varies in intensity in the same individual at different times, as it must, to produce attacks of epilepsy so unlike. To make the matter plain, it seems clear that an epileptic convulsion seems to be a reaction on the part of a living body, inherently weak at some point, to a poison or loss of function, this reaction not manifesting itself as an elevation of temperature, delirium or fever, or in some other way common to reactions; it comes as a sudden disintegration of nervous tissue involved, the nature and result varying according to the area involved in the so-called "nervous discharge."—Spratling.

The third proposition above stated is the basis of this paper and it should be here stated, with due deference to the illustrious men who have worked on this theory of epilepsy, that the toxæmic theory of the causation of this disease has had too narrow an application. It will be seen above that the theory to be supported in this dissertation is not only that of a poison, but also the effects of a loss of function.

The Nature of Epilepsy.

Gowers states that:—

> The function of the nervous system and especially of cortex of the brain, depends upon a capacity for instant release of nerve energy. . . It is probable that the energy from which nerve force is released is latent chemical energy and this latent energy is stored up inter-atomic and inter-molecular motion; nerve energy is a form of transmitted motion by transmitted chemical processes. The point for us is that the nerve force must be ready for instant release in the grey matter. Whatever its source, it must be held in the state of most delicate equilibrium by the restraint which keeps it unreleased but ready. Indeed, to use a simile, the vessels that hold it must be not only filled to the brim and delicately poised, but must be actually overflowing. Both the fact of the constant process of nutritional change and the evidence of constant activity in the nervous system, lead to the conviction that the readiness of the nerve energy is obtained by its constant overflow, that the chemical processes which induce its sudden generation are always going on in slight degree and that only thus is it kept so as to be released at once in the needful amount.
>
> But this involves a conception of extreme delicacy of adjustment between the chemical relations—the tendency of the atoms to unite in fresh and closer combinations and release their latent energy and the attraction which keeps them from doing so. This makes it easy to conceive that the slightest deviation from the normal relations between the atoms and the molecules may bring these into a position in which the equilibrium is suddenly overturned and a quick combination and a sudden release of energy occurs.
>
> But another equally important fact must be recognized. The liberation of nervous energy involves the escape of some atoms of the nerve tissue which are promptly replaced from the plasma adjacent to them. The rearrangement is the same and yet not quite the same. It differs in just the degree and character to make the same release of nerve energy more easy in the future. Every action paves the way for its own recurrence. This is the secret of the acquisition of skill; it constitutes the physical basis of memory; it is this which facilitates the repetition of a given morbid process and causes the recurrence of the discharge which makes epilepsy a disease. . . . . Every fit is in part at least the result of those which have preceded it and in part a cause of those which follow it.

This is, therefore, the position on the occurrence of the first fit and the cause of the first discharge of energy becomes all the more powerful as an agent in future discharges.

There is a great amount of truth in the "three level" theory of Hughlings Jackson in the classification of epilepsy. Of these three levels, the first or lowest level of motor discharge, the muscles, although in some cases of *status epilepticus*, as shown by Mott, fatty changes in the cardiac and voluntary muscle are found, these changes can scarcely be shown to occur in every single discharge and it would be more likely to be the result, secondary to an acute condition such as *status epilepticus*.

It is, however, possible that a toxin acting on the muscle substance could produce a kind of epilepsy.

The middle level, or tract between the muscles and the central nervous system, represented by the peripheral nervous system and sympathetic system and including the spinal cord and sympathetic chain, is undoubtedly responsible for what is known as the "reflex epilepsies." This does not give any explanation of the repetitive character of the epileptic convulsion any more than we find in, say, strychnine poisoning. It is also probable that many of the so-called reflex epilepsies and epilepsies due to disorders of the sympathetic system are either activated by or associated with a toxæmia, or directly or indirectly the result of a loss of function of certain important organs or glands of the body.

Epilepsy, therefore, is thought in the majority of instances to have a cerebral, or "highest level," origin and in such a theory the muscles are regarded as normal muscles, and the motor and intervening tracts, both cortico-spinal and peripheral, to permit of the transmission of the epileptic discharge must in the majority of cases be normal.

The discharging elements of the cortex are the giant or Betz cells and are analagous in this respect to the Purkinje cells of the cerebellum and the anterior horn cells of the spinal cord. The rest of the cortex may be regarded as (*a*) receiving stimuli from elsewhere and then (*b*) either inhibiting or facilitating discharge of motor energy in response. Therefore, any influence which lessens inhibition, thereby increases facilitation, lowers the threshold of stimulation and provides the necessary factor for the disturbance of the delicate adjustment referred to by Gowers. In addition, it is obvious that the continuous action of the same influence would have the result of making the restraint of inhibition less difficult to overcome or, to put it in a different way, of rendering the normal chemical relation between the atoms and molecules chemically more and increasingly more unstable.

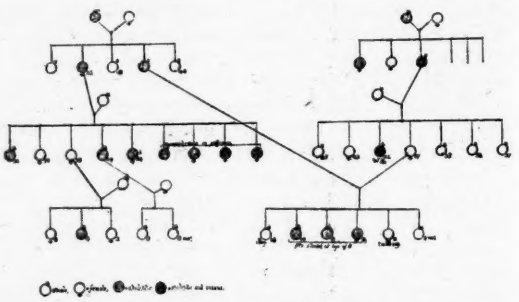
The Epileptic Temperament.

Let us consider at this stage the personality of the epileptic, which is so familiar to all of us having to treat these patients. He is quite unreasonable, is moody and very variable; he is treacherous and unreliable and extremely bad tempered. He is untruthful and quarrelsome, although very attached to his home and people; he does not realize the gravity of his state. He frequently refuses to admit that he has fits, calling them "swoons" or "bilious attacks" and may become enraged and violent if accused of being an epileptic, or he may have no memory of his fits or automatic acts committed in association with them. He is frequently hyper-religious and is addicted to public manifestations of his religious beliefs. He is also very ungrateful and querulous and is extremely hopeful of his cure. He will persistently speak of wonderful cures he has discovered for epilepsy, which he usually will not divulge. He is, in metaphor, like a vessel filled to the brim, seething and bubbling and at any time and without obvious cause likely to boil over. Physically, he is usually unhealthy in appearance, with a complexion of face alternately muddy or congested, is frequently subject to acneiform or other pustular eruptions (apart from bromidism), has a furred tongue, foul breath, voracious appetite and is frequently dyspeptic and hypochondriacal. Truly, the exact prototype of an unhealthy and probably toxæmic, mental and physical state and, in many cases, his very facies suggests a toxic basis.

Causation of Epilepsy.

A.—Predisposing Causes.

(*a*) *Heredity.*—Heredity is undoubtedly the most important predisposing cause. The tables given by various authorities show an hereditary defect in varying degrees from 25% to 66% of all epileptics. Spratling finds that 56% have a hereditary history. I give hereunder the pedigree of W.S., an epileptic at present in the Hospital for Insane, Kew. It shows epi-



lepsy or epileptic equivalents, such as convulsions ascribed to teething in infancy, which, considering the history as a whole, seem very suspicious of being of epileptic origin. Sleep walking will be noticed in one individual and for similar reasons may possibly have an epileptic cause. The pedigree shows beautifully four generations of epilepsy in two collateral branches. Mott's law of anticipation is also well displayed and in the case of the four children of the patient's sister, each became epileptic as they reached the age of eight years.

(*b*) *Alcohol.*—This, especially in the parents, is undoubtedly a potent cause. There are several cases in which, without a history of epilepsy on either side of the family, individuals whose conception took place while the father was on a drunken debauch, subsequently became epileptic. Alcohol has also been found to cause epilepsy in the drunkard himself. There is according to some writers a close relation between *delirium tremens* and epilepsy, especially if the latter be due to an alcoholic toxæmia.

B.—Exciting Causes.

There has been a long warfare waged between the exponents of the various theories brought forward in explanation of what is known as idiopathic epilepsy and numerous theories have been raised and dropped after varying intervals.

(*a*) *Cerebral Anæmia Theory.*—It is well known that convulsions occur as a result of the sudden cutting off of the cerebral blood supply or to prolonged deprivation of the blood supply. Examples of this may be found in the convulsions of Stokes-Adams's disease and the Kausmall-Tenner fits produced by ligature of the common carotid artery. Rus-

sell states that the underlying factor in such states is the cerebral anæmia produced, associated with vaso-constriction of the cerebral vessels. It has also been maintained that the vagus inhibition of the cardiac muscle is a main factor in producing this cerebral anæmia and in support of this, it has been stated by several writers that there is a temporary cessation of the heart's action at the commencement of an epileptic fit. Munson, carrying out an elaborate series of experiments, has failed to find any evidence of cardiac arrest or of the heart taking part in the contraction shown by the voluntary muscles. He thus controverts this portion of the evidence brought forward to support this theory on the part of those who hold that this cardiac arrest is partly the cause of the cerebral anæmia. This anæmia of the brain has been adduced by Russell as explaining the unconsciousness accompanying an epileptic fit, due to a sudden arrest of the cerebral circulation, but this, even if admitted, does not prove the absence of a pre-existing toxæmic cause, to which the cerebral anæmia may be purely secondary. For example, in uræmia, which Russell most unfortunately selects as an example of the action of anæmia, even if such an anæmia be present, which is extremely doubtful, it is well known that toxæmia and toxæmia alone is the primary cause of the convulsions and also of the unconsciousness. (Even the classical Kausmall-Tenner fits might be equally susceptible of an explanation by which the cerebral anæmia is made secondary to the stimulation of the vagus by the CO_2 accumulation in the brain and the absence of oxygen.) In any case, cerebral anæmia does not explain sufficiently the periodic recurrence of the convulsions at more or less regular intervals.

(b) *The Toxæmic Theory.*—I am endeavouring to show that toxæmia is the main exciting cause of the recurring epileptic convulsions, that a disturbance of metabolism in some directions is the cause of the epileptiform seizures and that this disturbance is acting on a cell system, the chemical nature of which, as shown above, is very unstable. This instability is increased in the majority of cases by inheritance and in consequence very slight causes are sufficient to overturn the equilibrium.

That this chemical instability exists is further shown by the fact that pathological cerebral changes are not distinctive and are mostly those common to any chronic irritation, such as gliosis, chromatolysis, etc.. This absence of any visible lesion characteristic of the epileptic condition supports the assumption that "endogenous poisons or metabolic disturbances are the cause of the disease and the analogies to other auto-intoxications support this view."

Let us examine in succession the principal organs of the body, in order that we may, if possible, trace any connexion between disorders of such entities as the liver, kidneys, thyroid, supra-renal glands, intestines, etc.. These organs will be considered *seriatim* in regard to their connexion with this problem:—

(1) *The Liver.*—There are in certain pathological conditions of the organism, exact representations of the clinical picture portrayed in epilepsy. When examining this subject, the first fact that presents itself is the close resemblance between the epileptic and the eclamptic conditions. I shall first very briefly discuss the pathology of eclampsia.

It is a definitely proven fact that changes in the liver are almost always found in fatal cases of eclampsia. In some cases these changes are only microscopic; sometimes the liver is larger than normal and contains small subcapsular hæmorrhages of a multiple type and the toxic condition may even cause a condition which, macroscopically at any rate, resembles acute yellow atrophy. On examination under the microscope, masses of liver cells are found to be undergoing fatty and granular degeneration; there are in other parts areas of necrosis; hæmorrhages of an interstitial type are numerous and infarctions of a minute type due to embolism or thrombosis of the branches of the portal vein.

Eden states that these changes in eclampsia resemble those found in acute yellow atrophy or in septic intoxications of an acute type. Now, it is admitted without question that the causation of the convulsions in eclampsia, uræmia, perhaps even in the later stages of acute yellow atrophy and in certain drug intoxications is a definite toxæmia, due to the failure of some essential portions of the secretory or excretory systems, or both. Furthermore, the relation between the liver and kidneys in the formation and excretion of urea is well known and any disorder of the one should reasonably affect or be represented in the other. This relationship is seen in eclampsia where the liver is mainly at fault, and in uræmia, where the kidneys are affected, or in both, where as a result of the retention of toxins, epileptiform convulsions are present. In eclampsia, as Eden states, these cases are examples of toxæmia of a purely hepatic origin, with secondary anæmia of the cortex from arterial spasm due to the toxic condition of the blood circulating in the cerebral vessels, resulting from the failure of the liver and kidneys. The lesions in the liver are the result of: (*i.*) the toxic substances in the blood, (*ii.*) embolic infarctions of the liver, (*iii.*) rupture of the small vessels during a fit. Fothergill states that first the liver fails and then, as an extra strain is thrown on the kidneys, there is at first increased elimination of toxins and urea by the kidney; then, when the kidney fails, there is diminished excretion of urea and toxins and then albuminuria, toxæmia, cerebral anæmia and convulsions follow in regular sequence. So that all this evidence goes still further to prove that cerebral anæmia is but a secondary factor and toxæmia the main factor in convulsive seizures.

From the evidence adduced, is it not therefore quite logical that the condition of the liver should be examined in epilepsy in relation to the macroscopic and microscopic condition of its cells and also as regards its function? Féré states that some types of puerperal eclampsia are merely the onset of epilepsy in an acute form. Aldren Turner states that he has seen many cases of eclamptic seizures the forerunners of permanent epilepsy. If there is no doubt of the toxicity of the causation of uræmia, the subsequent epilepsy should also be due to this cause.

Two observers in America noticed that the normal liver-brain relation as regards weight was altered in epilepsy. The normal relation is found post mortem to be liver 1,500 grammes, brain 1,200 grammes, with a wide margin in both cases on either side of the mean. They found that in epilepsy the relation was so altered as to indicate some distinct atrophy of the liver and that the relation between the weights of the brain and liver was altered in favour of the former. This fact, if established, would confirm the theory that toxic and necrotic changes in the liver, followed as a natural sequence by atrophy, occurred in epilepsy. I have examined the findings in 25 cases of epileptics who had died in the Hospital for Insane, Kew, carefully excluding all cases in which extraneous causes, such as syphilis or congenital mental deficiency, might play a part.

The following are the records of a *post-mortem* examination of 25 cases of epilepsy, as far as the liver, etc., is concerned:—

Table I.

	Age.	Liver in Grms.	Brain in Grms.	Post-Mortem Condition of Liver, Etc..
2. A.D. ..	31	1,260	1,380	Capsule marbled
4. J.H. ..	62	1,275	1,410	Liver congested and nutmeg
6. J.R. ..	28	1,830	1,560	Liver tough and marbled
15. F.K. ..	51	1,150	1,545	Liver tough and marbled
20. A.B. ..	36	1,180	1,570	Liver small, congested and nutmeg
21. J.E. ..	38	1,340	1,375	Liver tough and slightly marbled; gall stone in gall bladder
25. M.N. ..	56	975	1,360	Epileptic for 20 years; liver soft; solitary gall stone
27. L.O'C. ..	55	1,695	1,590	*Status epilepticus*; liver soft and congested; very large and dilated gall bladder
29. J.O'R. ..	34	885	1,425	*Status epilepticus*; cerebral congestion; liver tough; mesenteric glands slightly enlarged
30. H.Y.S. ..	19	1,140	1,485	Capsule of liver marbled; substance tough; mesentery and omentum very wasted
31. W.P. ..	67	1,095	1,290	Liver capsule marbled; upper surface deeply notched
35. W.M. ..	16	855	1,395	Liver capsule mottled; mesenteric glands enlarged; no ulceration of Peyer's patches
43. C.Y. ..	47	1,590	1,650	*Status epilepticus*, liver congested
46. J.M. ..	51	1,050	1,485	Liver capsule whitish and mottled; gall bladder contains numerous calculi; peritoneum very tough throughout
47. K.D. ..	68	1,260	1,380	*Status epilepticus*; liver rather fatty.
48. R.S. ..	21	1,770	1,245	Liver congested; peritoneum tough
52. F.D. ..	22	1,095	1,410	Liver shows fine fibrosis
53. E.P. ..	24	1,380	1,440	*Status epilepticus*; tough and congested
55. W.S. ..	52	1,260	1,500	*Status epilepticus*; liver congested; gall stones in gall bladder, with adhesions of omentum round the gall bladder
56. T.McL. ..	25	2,250	1,500	Large liver; adhesions round gall bladder; tough peritoneum
58. C.B. ..	31	1,560	1,560	Subscapular mottling of liver; substance somewhat tough
60. H.G.	39	1,290	1,140	Liver tough and small nutmeg
72. J.C. ..	36	1,095	1,265	Liver tough; chronic irritative condition present
73. W.J.	38	1,700	1,395	Liver tough and fibrotic
74. E.S. ..	51	1,230	1,610	Liver tough and congested

The summary of the above observations is that the brain-liver ratio is 35:33. The normal ratio is brain to liver, 12:15, so that the conditions are entirely reversed in the epileptic condition. It is, therefore, only reasonable to examine the liver in more detail. The percentage in which the weights of the brain exceed those of the liver is 80% in the 25 cases under examination.

(*i.*) In 24% of cases *status epilepticus* is found and associated with this condition is toughness and congestion, indicating previous chronic irritation and present acute inflammation in 30% of these cases. There are signs of disease of the gall bladder and possibly of chronic intoxication from this source.

(*ii.*) In 8% of cases the mesenteric glands were enlarged, indicating some chronic intestinal toxæmia of fairly long duration.

(*iii.*) In 20% of cases there was definite trouble in the gall-bladder tract and, as in typhoid, it is possible that there is some connexion between the toxic condition causing cholelithiasis and that causing idiopathic epilepsy.

(*iv.*) In 40% of cases there was evidence of chronic hepatic irritation, indicative of a continuous and slow toxin, displayed by fibrosis or toxic or fatty changes.

To summarize, there is every evidence of a slowly acting but continuous toxin, acting on the liver tract, including the hepatic and biliary areas and causing fibrotic and irritative changes.

In addition, in 8% of cases there is distinct evidence of a chronic intestinal intoxication, which might in all probability be obviated by treatment.

The alteration of the brain-liver ratio in favour of the former also gives an indication of chronic intoxication followed by atrophy as far as the liver is concerned; in fact, a form of cirrhosis due to fibrosis, primarily or secondarily to fatty or congestive changes, is the result. The effect is seen in the convulsive seizures of the epileptic state, due to failure of the liver function, especially as far as urea formation is concerned, and associated with a defective kidney excretion in many cases.

II.—*The Kidneys.*—The comparatively frequent association of epilepsy with alteration of the toxicity of the urine has been noted by many observers.

Féré attributes epilepsy to a convulsive poison in the urine. Other authors hold that before the fits the urine is hypo-poisonous and after them hyper-poisonous; others, that the epileptic organism retains a large quantity of urea and that it is this agent that acts as a poison in the disease.

Weber thinks that in epilepsy the body tissues are modified in a pathological direction and the poisons thus produced act on every organ, vitiating the secre-

tions, on the vessels, kidneys and, above all, on the central nervous system.

Kransky states that the poison inducing epilepsy is carbamic acid, which is derived from uric acid and is produced by the transformation of the albuminoid molecule. Guidi found that the administration of ammonium carbonate in 0.3 grm. doses increased the number of fits. In two cases of my own after the administration of this salt, the seizures were definitely increased in number, although further investigations will be necessary before any definite statement can be made on this point.

Table II.

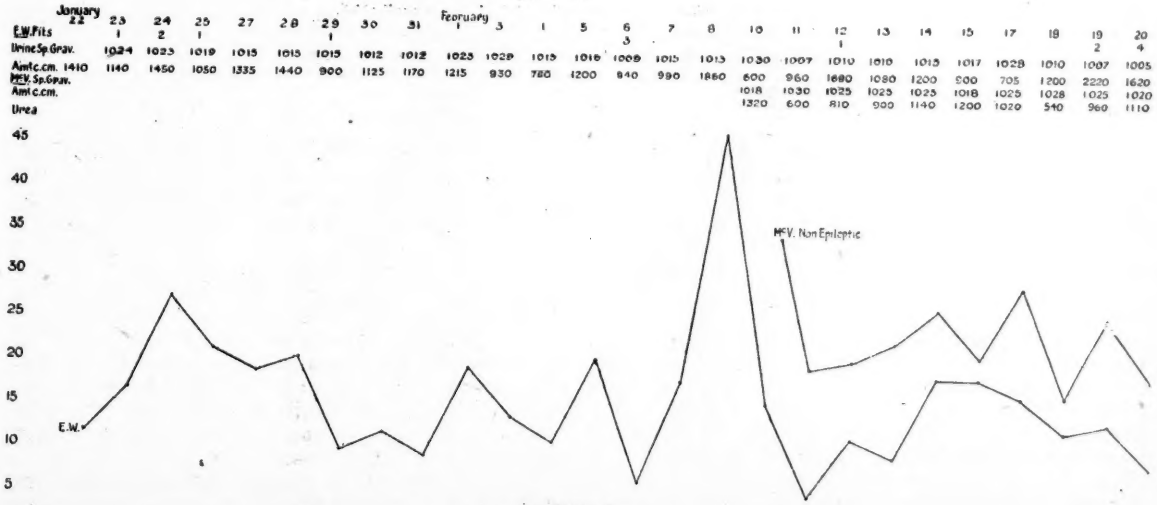
Date.	No. of Fits Before Ammonium Carbonate was Administered. Patients' Initials. S.C.	L.A.	No. of Fits After Ammonium Carbonate was Administered. Patients' Initials. S.C.	L.A.
February 6, 1919 ..	3	2	—	—
February 7, 1919 ..	—	—	—	—
February 8, 1919 ..	—	—	—	—
February 10, 1919 ..	1	—	—	—
February 11, 1919 ..	—	—	—	—
February 12, 1919 ..	1	—	—	—
February 13, 1919 ..	2	—	—	—
February 14, 1919 ..	1	—	—	—
February 15, 1919 ..	1	—	—	—
February 17, 1919 ..	1	—	—	—
February 18, 1919 ..	1	—	—	—
February 19, 1919 ..	4	—	—	—
February 20, 1919 ..	—	—	—	—
February 24, 1919 ..	—	—	2	1
February 25, 1919 ..	—	—	4	—
February 26, 1919 ..	—	—	2	—
February 27, 1919 ..	—	—	5	—
February 28, 1919 ..	—	—	3	—
March 1, 1919 ..	—	—	5	—
March 3, 1919 ..	—	—	2	—
March 4, 1919 ..	—	—	2	—
March 5, 1919 ..	—	—	2	1
March 6, 1919 ..	—	—	1	—
March 7, 1919 ..	—	—	3	1
March 8, 1919 ..	—	—	2	1
March 10, 1919 ..	—	—	2	3
Total number of fits in 13 days	15	2 ..	35	7

A non-epileptic had been on ammonium carbonate for some time and had had no fits.

Guidi is of the opinion that the organ which is the cause of epilepsy is the liver, because it is the organ which presides over the transformation of the albuminoid molecule. This observation fits in with the facts about the liver as described above, but it is more true to state that there is a disturbance of the relation between the liver and kidneys as far as the formation of urea is concerned, commencing with a deficiency in the capacity of the hepatic cells of the liver to complete the synthesis of urea. The ammoniacal and nitrogenous elements accumulate, are not sufficiently excreted by the kidneys prior to the fit and are consequently stored up, finally upsetting the unstable cortical equilibrium when the urine becomes loaded with nitrogenous bodies.

The following are the charts of four patients, whose urine has been carefully examined for the excretion of urea each day and graphs made accordingly.

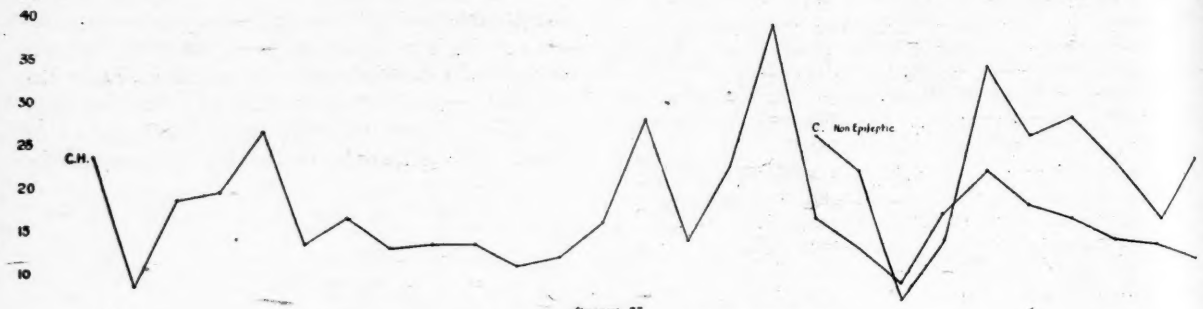
(1) In the case of E.W. the excretion of nitrogen on January 22, 1919, was below normal, or in other words was retained in the body. As soon as the seizures commenced on the following day, the excretion of nitrogen rose and continued to rise on the next day, when there was another seizure. Following the third seizure there was a fall, indicating fresh retention, and on the 28th and 29th, although the retention had not been considerable, it was yet sufficient to cause another seizure associated with a slight rise in the nitrogenous excretion, following by an immediate fall to below the normal limits. In other words, there was fresh retention of the nitrogenous toxins until between February 2 and February 7, 1919, a fall again occurred, synchronous with the occurrence of three fits. This was followed by a great rise in the excretion; then after an attack of *petit mal*, a further fall in excretion on February 12, 1919, caused a further seizure, which was followed again by a rise in the excretion. Finally there was a continuous fall in the excretion until February 19, 1919, when there were



GRAPH I.
Urea excretion of E.W. (epileptic) and of M.N. (non-epileptic).
Urea in grammes per diem.

	January 21	22	23	24	25	27	28	29	30	31	February 1	3	4	5	6	7	8	10	11	12	13	14	15	17	18	19	20
C.H. Fits																											
Urine Sp.Grav.			1025	1025	1021	1020	1016	1015	1020	1017	1018	1022	1019	1020	1012	1015	1018	1025	1025	1015	1020	1010	1020	1020	1026	1010	1020
Amt c.cm	1380	840	1020	1110	960	1305	1200	1320	945	930	765	810	1080	1200	1440	1140	1800	750	600	810	960	1230	1200	750	900	1980	930
C. Sp.Grav.																		1015	1020	1008	1022	1022	1017	1025	1022	1015	1022
Amt c.cm																		1740	1110	1770	570	1230	1770	1020	830	1350	1080

Urea



Graph II.
Urea excretion of C.H. (epileptic) and of C. (non-epileptic).

	January 20	21	22	23	24	25	27	28	29	30	31	February 1	3	4	5	6	7	8	10	11	12	13	14	15	17	18	19	20
S.C. Fits	1		1	1			2						1		3	3			1		1	2	1	1	1	4	4	
Urine Sp.Grav.				1025	1023	1026	1022	1017	1020	1028	1018	1027	1013	1024	1027	1020	1025	1028	1027	1014	1020	1020	1025	1025	1022	1010	1015	1020
Amt c.cm	11215	555	930	900	1695	765	1155	1350	915	465	1095	495	960	1320	840	860	900	900	660	960	1020	1020	570	1020	1110	1080	1200	930
N.Sp.Grav.																			1025	1022	1015	1010	1027	1027	1030	1032	1010	1027
Amt c.cm																			1170	660	480	750	660	570	780	480	900	480

Urea

Graph III.
Urea excretion of S.C. (epileptic) and of K. (non-epileptic).

	January 20	21	22	23	24	25	27	28	29	30	31	February 1	3	4	5	6	7	8	10	11	12	13	14	15	17	18	19	20
G.H. Fits	1						1		1				1			1	1											
Urine Sp.Grav.				1027	1024	1027	1016	1026	1020	1015	1020	1020	1015	1025	1026	1018	1013	1025	1028	1030	1020	1012	1025	1025	1025	1015	1020	1022
Amt c.cm	1365	990	1170	1140	1320	795	1290	1085	1620	1200	1080	1530	1380	1380	1620	900	900	1140	660	510	1380	1620	660	1200	1320	960		
J. Sp.Grav.																			1020	1030	1010	1020	1030	1010	1020	1020	1020	1020
Amt c.cm																			780cc	540cc	1230cc	720cc	300cc	1440	930	1170	420	840

Urea

Graph IV.
Urea excretion of G. H. (epileptic) and of J. (non-epileptic).
Urea in grammes per diem.

two seizures, followed by four more when the excretion had reached its lowest limit.

(2) In the chart of C.H. it will be noticed that all the seizures occurred when the excretion of nitrogen was at its minimum and that they were followed by rises in the excretion.

(3) In Graph III., that of S.C., the relation between the excretion of urea and the onset of fits is not so obvious, but in the first part of the graph the fall in nitrogenous excretion followed by a rise after seizures is fairly well exemplified. In the latter part there is not sufficient time limit between the seizures to allow of any accurate interpretation.

(4) Graph IV., of G.H., is a good example of association of retention of nitrogen with seizures.

In all cases the twenty-four hours' estimation of the urine and the specific gravity were taken. The presence of albumin eliminated and of indican in the urine was determined.

It will be noticed as confirmatory of the above results that on the whole the quantities of urine are increased for the twenty-four hours at the same time as, and parallel with, the rise in the excretion of urea.

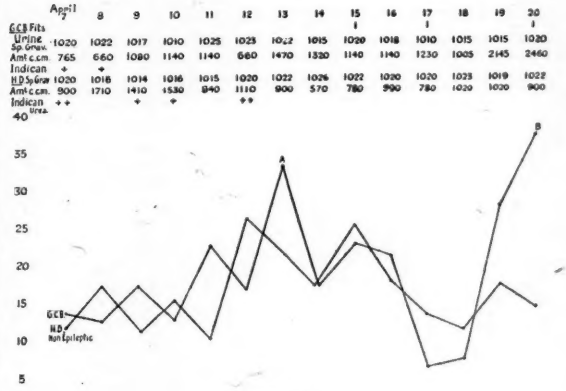
It is, therefore, clearly demonstrated by the foregoing graphs that that part of the curve lying between the valleys between the peaks and a point near the crest of the peaks corresponds to the period during which the equilibrium is upset. In this period the discharge occurs, the subsequent excess of nitrogen excretion restoring the balance by the time the crest of the peak is reached, whereupon the accumulation, or retention, of the nitrogenous toxin recommences.

In Graphs V., VI. and VII. still further evidence of a toxic cause being present will be found.

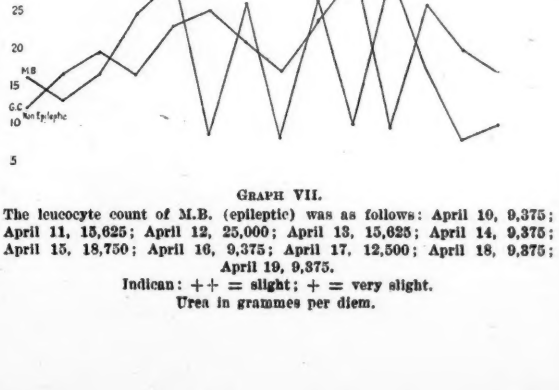
GRAPH V.
Indican: ++ = slight; + = very slight.
Urea in grammes per diem.

The first half of the Graph V is of interest, showing the incidence of fits at the time when the excretion of nitrogenous products is at its lowest.

In Graph VII. the presence of a leucocytosis, 25,000, is shown synonymous with a fit and associated with a diminished nitrogenous excretion. The fact of a leucocytosis, so common in most conditions of toxæmia, is another fact in support of this theory. The rest of this chart is certainly anomalous, in that no further fits are recorded, although both retention of nitrogen and leucocytosis are shown at intervals, but this anomaly may be explained to a certain extent by the fact that the fits were most often nocturnal and some may have escaped the notice of the night nurse. In addition, the increase in the quantity of urine and the



GRAPH VI.
The leucocyte count of G.C.B. (epileptic) was as follows: April 8, 9,375; April 9, 9,375; April 10, 6,250; April 11, 12,500; April 12, 9,375; April 13, 15,625; April 14, 6,250; April 15, 6,250; April 16, 6,250; April 17, 9,375; April 18, 9,375; April 19, 9,375.
Indican: ++ = slight; + = very slight.
Urea in grammes per diem.



GRAPH VII.
The leucocyte count of M.B. (epileptic) was as follows: April 10, 9,375; April 11, 15,625; April 12, 25,000; April 13, 15,625; April 14, 9,375; April 15, 18,750; April 16, 9,375; April 17, 12,500; April 18, 9,375; April 19, 9,375.
Indican: ++ = slight; + = very slight.
Urea in grammes per diem.

leucocytosis shown on April 15, 1919 (18,750), only needed a fit to complete the complex, when this took the form of *petit mal* or an epileptic equivalent, it would fit in with the time when the nitrogen excretion was increasing, but had not reached the crest of the rise. The same applies to the less marked leucocytosis on April 17, 1919 (12,500).

Graph VI. is also anomalous, in that the leucocytosis (15,625) occurred two days before the first recorded seizure, but the enormous increase in the quantity of urine passed, from 660 c.cm. to 1,470 c.cm., would seem to point again to that above explanation, *i.e.*, the occurrence of an epileptic fit or its equivalent.

This graph also shows that the only three fits occurred at a time when the excretion of nitrogen was at its lowest, or on the up grade before the maximum of excretion was reached, *i.e.*, in the valley between the highest points A and B; this was also associated with an increase in the amount of urine before the point B is reached.

In these three graphs the estimation of nitrogen is shown in an epileptic as against a non-epileptic and, though there are considerable variations in the non-epileptics, on the whole they are neither as great nor as constant as in the epileptics.

is found to be present in the urine. The absorption of the toxin indicated by indicanuria is materially aided by the presence of constipation, which, as every clinical observer knows, so frequently accompanies the immediate pre-paroxysmal stage. As an example of the influence of constipation one epileptic, with two years' history, is reported to have recovered after the constipation, lasting for weeks at a time, had been remedied.

Dr. Atkinson describes a patient with epilepsy associated with constipation, who passed a scyballous mass after calomel, which was perfectly free from all trace of bile; subsequently the epileptic symptoms ceased.

Cases of epilepsy in children with carbo-hydrate dyspepsia, where there appears to have been chronic infection of the colon, have been arrested when the dyspeptic condition due to this cause was corrected.

The indication of such intestinal toxæmia is found to be in the presence of indican in the urine, or in other words, the excretion, under abnormal conditions, of one of the end-products of the indol group.

Table III. demonstrates the occurrence of indicanuria associated with epileptic seizures. In two of

Table III.

	Patients' Initials.											
	L.A.		C.H.		G.H.		E.W.		S.C.	
	Fits.	Indican.	Fits.	Indican.	Fits.	Indican.	Fits.	Indican.	Fits.	Indican.
February 24, 1919	1	—	—	++	—	—	—	+	2	—
February 25, 1919	—	—	—	—	1	—	—	—	4	—
February 26, 1919	—	—	—	—	—	—	—	—	2	—
February 27, 1919	—	+	—	—	—	—	—	—	5	—
February 28, 1919	—	—	2	+++	—	—	—	—	3	—
March 1, 1919	—	—	—	—	—	+	—	—	5	+++
March 3, 1919	—	—	3	—	—	—	3	—	2	++
March 4, 1919	—	—	—	++++	—	—	—	+	2	—
March 5, 1919	1	—	1	++	—	—	—	—	2	—
March 6, 1919	—	++	1	+++	—	—	—	++	1	—
March 7, 1919	1	+	—	—	2	—	—	—	3	+
March 8, 1919	1	+	—	—	1	—	—	—	2	—

\+ = Very slight indican reaction.
++ = Slight indican reaction.
+++ = Marked indican reaction.
++++ = Very marked indican reaction.

The above results in regard to the liver and kidney must be regarded as an instalment only, for much has still to be done in order to ascertain microscopically if the findings are confirmed by changes in the parenchyma or interstitial tissue of the liver or kidneys. The urinary investigations above detailed will need to be still continued and further developed.

III.—*The Alimentary Canal.*—In considering the epileptic temperament, it was noted that, as a general rule, the epileptic shows all the superficial physical characteristics indicative of a toxæmia, the result of a gastro-intestinal irritation and subsequent absorption. This is indicated by the muddy complexion, acneiform eruptions, furred tongue, foul breath and the frequently expressed ideas of dyspepsia and constipation; associated with the latter is the occurrence of offensive stools.

Surely these signs and symptoms, which in any other physical condition would lead to an investigation of the condition of the alimentary tract, should not be overlooked, nor should it be treated as purely secondary to the epileptic state.

In most intestinal toxæmias, as a result of the absorption of the indol and skatol end-products, indican

the five—C.H. and S.C.—marked indicanuria associated with frequent paroxysms is shown. Indican was also found to be present in the urine of the patients E.W., C.H., S.C. and G.H..

It is not asserted that in every case of epilepsy a product caused by toxic absorption from the alimentary canal is present as a cause of the fits, but it would appear from my observations that a certain proportion of cases shows this abnormal constituent of the urine, with or without lesions in the liver or kidneys.

Confusion is the outstanding feature in the mental states produced by toxæmia and this also a well-known feature of the epileptic state. The products of imperfectly elaborated protein, which are frequently present even with a reduced diet, display their action on absorption by cloudy swelling of the hepatic cells and frequently by an interference with renal elimination, either similarly induced, or secondary to injury to the hepatic cells, inhibiting their function of urea formation, thus, as I have demonstrated above, causing retention of nitrogenous substances.

Lack of proper adjustment of the diet, especially in the matter of the carbo-hydrates, leads to an acidosis, which

further increases the toxic state by interfering with proteolysis as well as with proper catabolism.

Williams, of Washington (*Journal of Mental Science*, July, 1917), describes attacks of confusion due to metabolic migraine resembling *petit mal*; these attacks were "bilious"—but not preceded or accompanied by constipation—with headache, numbness and prickling in the fingers, followed by dizziness and foolish talk of the paraphasic type, without loss of consciousness. These attacks occurred every two or three months since the patient was 22 years of age and were of short duration. The headache lasting a day, was followed by dulness and slowness on the following day and the capacity for concentration was increasingly improved even between the attacks; he was at times irritable. This description might for its accuracy be one of *petit mal* or that of the pre-epileptic stage of epilepsy and yet this patient improved on low protein diet with increased vegetable diet. There is, therefore, a close resemblance between these toxic confusional states and that accompanying the minor forms of epilepsy, such as *petit mal*.

The resemblance between the mental and physical condition immediately following epilepsy, whether major or minor, and the condition due in many cases to intestinal toxæmia and known as acidosis, led me to investigate the total acidity and the ammonia coefficient in epilepsy. Sufficient number of cases suitable for examination at the time selected were lacking, but in the only one case available the total acidity in the inter-paroxysmal stage was 63, and just prior to, and during, the epileptic period it rose to 475 and the ammonia coefficient rose correspondingly.

Further work yet will have to be done in this direction, but the above evidence should be significant.

IV.—*Endocrinic Organs.*—(*a*) The Thyroid.—Falta states that the thyroid is intimately associated with control of the central nervous system and is associated when diseased with epilepsy, especially with Graves's disease. Epileptiform convulsions have occurred after removal of the thyroid and patients have improved on the administration of thyroid or calcium lactate in cases of exopthalmic goître. In myxœdema there is occasionally found some depression of the chemical action of the brain, the reaction of which has led to fits resembling tetany.

Nicholson states that in eclampsia there is an insufficiency of activity of the thyroid gland, leading to want of iodothyrin, and as this activity controls the function of liver and kidney elimination, eclampsia results as a result of the failure. From the above results it will be seen how closely allied eclampsia and epilepsy are; this statement is most important.

(*b*) Thymus.—Epileptic convulsions are common in congenital mental deficiency and in the majority of the patients the thymus is absent.

Guy Prior and Evan Jones, of the New South Wales Lunacy Department (*Practitioner*, January, 1918), emphasize the importance of the gland in epilepsy, especially calling attention to the fact that epilepsy most commonly commences at the time of life that the thymus becomes functionless.

(*c*) Pituitary.—Schafer states that where there is a deficiency of pituitary function, there is a tendency to epilepsy and that a number of these patients have improved on pituitary extract.

It has also been observed that in epilepsy there are often changes in the pituitary gland (Johnston). Aberhalden's reaction has shown that in some epileptic cases the pituitary, in common with the suprarenals, harboured definite changes.

(*d*) Suprarenals.—As already stated above, deficiency of the suprarenals, as ascertained by the Adberhalden reaction, was found to have been the cause of epilepsy. It has also been noted in *status epilepticus* that there is a deficiency of chromaffin substance in the adrenals, together with thymic hyperplasia.

(*e*) Ovaries.—Menstruation in epileptics is notoriously irregular and coincident with any improvement in the epileptic is the re-establishment of the periodicity of this function.

It is not suggested that the failure of the endocrinic organs is the cause of all cases of epilepsy, but that in many cases this failure associated with paroxysms should indicate what I wish to point out, that no investigation of the origin of any particular case of epilepsy is complete without a thorough examination of the endocrinic organs.

Summary.

It must not be imagined that this paper is anything more than an indication of the lines on which I have worked and will continue to work. If I have been able to emphasize the importance of the liver and secondarily of the kidneys, whether primarily or secondarily, in the ætiology of the epileptic state, I shall not have failed in my object. All work, the evidence of the greatest authorities on epilepsy, even those who support the cerebral anæmic theory by their failure to prove it more than a secondary and then possibly an activating cause, and the clinical observation, which is only possible in a mental hospital, in every instance point to a toxæmic cause.

To such an extent does epilepsy resemble eclampsia and uræmia that the object of this paper is deliberately to enunciate the opinion that clinically and pathologically epilepsy, eclampsia and uræmia are identical conditions, only differing in slight ætiological variations depending on the origin of the toxæmia, except in such cases as are the result of deficiency of the endocrinic organs.

This hypothesis, therefore, necessarily in the three above-mentioned conditions, with the exception stated, seems to indicate that the liver-kidney complex is the primary, although not the only, consideration in the investigation of the ætiology of any particular case of epilepsy.

It is also necessary to emphasize the necessity for research work in this, as well as in many other, forms of mental disease and also that such work is far more important than the ordinary routine of a mental hospital. It is not too much to state that if we are to make any progress in our knowledge of mental disease, the institution should practically be worked from its laboratory, which no matter in how small a form should be attached to each institution. The present system, where no provision for or encouragement in research work is made, is pandering to the false popular idea that nothing can be done for the insane and that the only treatment (?) is that the patients

should be locked up in an "asylum," which term itself indicates hopelessness and ineptitude.

Although my work has been done under the greatest difficulty on this account, I hope to publish further investigations on this subject at a later date.

I have to thank Dr. Gamble, Medical Superintendent, Hospital for Insane, Kew, for permission to publish a case, and also Dr. Lind, Pathologist to the Victorian Lunacy Department, for many helpful suggestions.

Reports of Cases.

THE TREATMENT OF CHOREA.

By **G. H. Burnell, M.B., B.S. (Adel.),**
Acting Surgeon-Superintendent, Broken Hill and District Hospital.

The usual treatment of chorea leaves a good deal to be desired. In the past this has been largely confined to keeping the patient quiet, giving a simple nourishing diet, excluding stimulants and to the exhibition of tonics, salicylate of soda, arsenic in the form of Fowler's solution and latterly aspirin in heroic doses. In severe cases opium, bromides and chloral have been resorted to, to control the excessive movements.

Even where these measures prove successful, all authorities are agreed that great caution should be shown in permitting the child again to attend school. Any measure, therefore, which will permit of an early return to normal life will be welcome.

The intimate association between chorea and rheumatism is now universally recognized. In this connexion Macdonald Gill, in his recent article "On Acute Rheumatic Heart Disease," says: "Chorea is to be looked upon merely as a cerebral manifestation of rheumatism."

In some clinics at least tonsillectomy is being practised as a routine in recurrent attacks of rheumatic endocarditis and arthritis.

In an article in *The Medical Review* (December, 1919), headed "Tonsillectomy for Rheumatic Affections," Nordlund says: "In the nose and throat department of the Sabbatsberg Hospital in Sweden it has been the practice for some years to accept rheumatic affections associated with chronic tonsillitis as an indication of tonsillectomy." The writer has, however, been unable to find any direct reference to tonsillectomy as a means of cure for chorea. Layton (*Lancet*, 1914, I., page 1106) describes three cases of chorea which began after operations on the throat, but this, in the writer's opinion, tends to confirm the theory of the close relation between chorea and tonsillitis, the attacks being probably brought on by the absorption of the rheumatic toxin or organism from the injured surfaces.

The intimate relation between these two diseases is well shown by Helmholtz (*Med. Annual*, 1918), who states that in a series of 138 cases of chorea:—

33% had a history of repeated tonsillitis.
21% had a history of rheumatic arthritis.
26% had a history of endocarditis.
8% had a history of rheumatism and tonsillitis.
21% had a history of rheumatism and endocarditis.
54% showed one or other of these manifestations.

It would appear, then, rational to expect distinct benefit to accrue from the elimination of what is probably the primary focus in chorea, namely, the tonsil.

The writer has only had the opportunity of testing this in two cases. While not pretending to draw conclusions from such a limited number, he would suggest a trial of the method by those who see large numbers of such cases.

In the writer's cases both patients had suffered repeated attacks and both had been in hospital on that account; they had not attended school regularly as they always relapsed after a few weeks' attendance.

After enucleating their tonsils (in both cases in October, 1918) no restrictions were placed on their activities. The first patient returned to school and in 1919 came fourth in her class of 60, while the boy went to work on a station. Both have remained free from attacks for over a period of 16 months.

Subjoined is a brief history of their illness.

CASE I.—D.M., girl, *æt.* 12 years, was admitted on August 28, 1918, complaining of twitching of all the limbs and face. Her speech was impaired on this account. She had been subject to repeated attacks of tonsillitis and had had many attacks of chorea during the past six years. There was no history of arthritis or so-called growing pains. The child was very pale; her tonsils were much hypertrophied and inflamed.

There was a well-marked præcordial thrill and a definite presystolic bruit at the apex. The heart's response to effort was good.

She was first treated with salicylate of soda and an astringent gargle to improve the throat condition. Later the intensive aspirin treatment was tried. The movements ceased and she was discharged on September 20, 1918.

She was re-admitted on September 28, 1918, on account of a return of the movements. She was given Fowler's solution in gradually increasing doses. Very little improvement resulting, her tonsils were enucleated under ethyl chloride anæsthesia on October, 26, 1918.

On October 30, the movements had ceased and she was discharged.

She reported on February 1, 1920, that she had had no twitching since discharged. She had been attending school regularly.

CASE II.—P.D., boy, *æt.* 14 yeass, was admitted on September 24, 1918, complaining of twitching of the right arm and right leg. The illness had lasted three weeks. His first attack was in January, 1915, for which he was in hospital for three months. He had returned to school in June, 1915, but had to leave again in September.

The present was the fourth attack.

There was no previous history of rheumatic arthritis, but he had been subject to "growing pain." He had not suffered from tonsillitis.

He was an undersized child for his age, exhibiting incessant movements of the right arm and leg, of the right side of the face and of the tongue. The tonsils were large, but not inflamed. The heart was apparently normal.

The intensive aspirin treatment (0.6 grm. every two hours) was first tried, but the movements became worse, so this was stopped. On October 1, 1918, he was given Fowler's solution and improved rapidly. The movements stopped in ten days and he was allowed to sit up. Five days later the movements returned.

It was therefore decided to remove his tonsils.

This was done on October 19, 1918, under ether anæsthesia. Some post-nasal growths were removed at the same time.

The movements persisted until October 24, 1918, and then passed off. He was discharged on November 7, 1918.

The patient reported on February 12, 1920, that he has been free from attacks since the operation.

It will be seen, then, that in two cases at least, tonsillectomy was successful in preventing a recurrence of the attacks.

As to the time at which to operate, it would appear inadvisable to interfere while the tonsils are acutely inflamed. Local measures to reduce the inflammation are first indicated and the enucleation can then be safely done in the quiescent stage.

McKenzie (*Med. Annual*, 1918, page 554), discussing the contra-indications to tonsillectomy, mentions the acute stage of chorea as one of these and also adds that it should not be done in the presence of an elevated temperature. The ideal method would, therefore, appear to be to keep the patient in bed, endeavouring by general and local treatment to reduce the severity of the attack and then to operate in the quiescent stage.

It may be that this procedure has already been adopted as a routine in chorea cases, but in the absence of any evidence that this is so, the writer has reported these cases in the hope that it will be given a trial in a large series of cases.

Reviews.

OTO-RHINO-LARYNGOLOGY.

The English translation by H. Clayton Fox of the original French work on oto-rhino-laryngology of Dr. Georges Laurens is a small volume of 324 pages.[1] It can be highly recommended as a reliable text book for the class of practitioners to whom it is addressed. The author sets himself out to explain the methods of examination, the normal and abnormal appearance of parts in the special regions with which he deals. By numerous simple diagrams he illustrates his terse, clear descripsions. It is absolutely necessary that the practitioner should have some knowledge of the anatomy of the region which he is treating and the relative position of parts. This is explained in the text with the aid of simple, easily-understood diagrams. The information is sufficient for the navigation of wide seas, not for the pilot in intricate waters.

The gospel which Georges Laurens preaches is "look, examine, observe, do not form a diagnosis from what the patient tells you; do not base your diagnosis on symptoms alone. Look into the ear, the nose or the throat." He helps you in your methods of examination and explains the picture which you see. A patient with violent earache may have a sound ear; his symptom may arise from a hollow molar. Examination of the ear will show absence of inflammatory changes or other local causes of pain. What to do, and what not to do in a given case are both clearly set out. The advice is sound and, if followed, will help the practitioner to adopt the right treatment.

The author says truly: "Chronic otorrhœa in the majority of cases is the result of an acute purulent middle ear otitis neglected or badly treated. The transition of an acute otitis to the condition of chronic otorrhœa can and ought nearly always be avoided." Write this text among the things worth remembering!

The chapter on adenoids contains useful information, but will disappoint those seeking information on "the technique of the operation for their removal, which is very difficult to acquire with the aid of a handbook." The author answers his own question: "Is anæsthesia necessary?" "In the case of the infant never; for the child it is debatable." We cannot endorse this view. Ether administered skilfully by the open method is without risk. The operation can be done thoroughly, a doubtful result in the case of a struggling and terrified child. The evil effect of pain on the child's nervous system can be more than temporary.

This work supplies a want. The student and practitioner will find it easy to understand. The little things that matter in treatment are minutely described. "What not to do" and "what to do" will be appreciated by the practitioner when he is in doubt.

[1] Oto-Rhino-Laryngology for the Student and Practitioner, by Georges Laurens, authorized English translation of the second revised French edition by H. Clayton Fox, F.R.C.S., with a foreword contributed by J. Dundas Grant, M.D., F.R.C.S.; 1919. Bristol: John Wright & Sons, Ltd.; London: Simpkin, Marshall, Hamilton, Kent & Co., Ltd.; Toronto: The Macmillan Co. of Canada, Ltd.; Demy 8vo., pp. 339, with 592 illustrations. Price, 17s. 6d. net.

Hospitals.

THE ROYAL PRINCE ALFRED HOSPITAL.

The annual report of the Royal Prince Alfred Hospital for the year ended June 30, 1919, was presented by the Directors to the subscribers on October 20, 1919. The report is divided into seven chapters, dealing with the statistical records, the medical and surgical work, the nursing staff, the administration, finance and the hospital buildings, while the final chapter is headed "general."

Statistical.

On June 30, 1918, there were 358 patients in the hospital. During the course of the year 7,309 patients were admitted, while at the end of the year there were 463 patients still under treatment. The number of those discharged was 6,680, including 4,320 who were said to be discharged "cured." The number of those who died was 524. Death took place within 24 hours of admission in 106 instances. The death-rate was 7.2%, or, if the percentage be calculated after deduction of 106 patients who died within the first twenty-four hours, it was 5.84 and not 5.45, as stated in the report. It appears that the calculation is made on the basis of the total number of persons under treatment during the year, without any correction for the number of those still under treatment at the end of the year and without deductions of the persons who died within twenty-four hours of admission, although this deduction is made from the number of deaths. The average number of patients in the hospital was 454.01, while the mean residence of the patients was 22.61 days. We note that these figures are calculated to the second place of decimals, notwithstanding the fact that one hundredth of a day is approximately 14½ minutes. The number of persons dealt with in the out-patient and casualty departments was 27,920. The average number of attendances given to these patients was just under three.

Of the 7,309 patients admitted, 3,301 contributed something towards the cost of their maintenance and 521 were military patients, for whom the Department of Defence paid the cost of maintenance. The number of operations performed during the year was 4,294. This represents 58.7% of the number of patients admitted. In recent years the percentage has been between 70 and 80. Our large general hospitals are becoming more and more diverted from their original uses. Formerly, patients in need of institutional treatment, who had not the means to obtain skilled medical and nursing attendance elsewhere, were admitted to hospitals. At the present time, the hospitals are used to an alarming extent for the performance of surgical operations. We are informed that at several of the large metropolitan hospitals a hundred or more patients are awaiting admission for operation, to the exclusion of persons in need of medical and non-operative surgical treatment. The operations performed are, no doubt, necessary or advisable, but we would venture to maintain that the sick poor have a claim to admission into the hospital before those who are seeking reparative operations. In 1883 and 1884 between 11% and 14% of the patients admitted were subject to operation. It would be both to the interests of the patients and to the advantage of students at these hospitals if this condition could be revived.

Medical and Surgical.

The large number of patients admitted during the year under review is accounted for by the arrangement entered into with the Department of Defence for the treatment of returned soldiers. It is stated that the number would have been considerably greater had influenza not broken out in Australia. At the request of the military authorities, twenty additional beds were provided for returned soldiers suffering from tuberculosis. The total number of beds available in the institution was 514. On the outbreak of influenza, some of the wards were used exclusively for this affection. Between April 8 and April 16 there were 300 patients in the hospital suffering from influenza. Many of the nurses and others employed in the hospital were attacked. During the two waves of the epidemic the out-patient departments were closed to all but urgent cases.

The number of persons under treatment at any given time in the venereal diseases clinic was limited to 200. It is anticipated that a considerable expansion will be introduced during the present year. Negotiations have taken place with the Government in regard to the erection of a special block of buildings for the indoor and outdoor treatment of persons suffering from venereal disease.

The anti-tuberculosis dispensary, which is under the direction of Dr. Sinclair Gillies and Dr. S. A. Smith, has continued as before, and the number of patients attending has increased. The nurses from the dispensary visit the patients in their homes. In the Pathological Department there has been steady development. Dr. A. H. Tebbutt, the Chief Resident Pathologist, on his return from active service, has introduced various improvements. Proposals have been put forward for increasing the accommodation. The equipment of the X-ray Department is being modernized and the Committee boasts that this is one of the most complete X-ray departments in any hospital. It is further recorded that considerable improvement in accommodation and

equipment has been effected in the Medical Gymnastic Department, under the direction of Dr. N. D. Royle. A large number of students have attended the work in this department.

An announcement was made at the annual meeting in 1918 that an agreement had been entered into with the Department of Defence to reserve a hundred beds for the treatment of returned soldiers. The first patients admitted under this arrangement arrived on July 22, 1918. From the end of the month the beds were all occupied. In October twenty additional beds were provided, as stated above, for the treatment of soldiers suffering from tuberculosis. Full use was made of the accommodation provided, although in the first half of 1919 the average number of soldiers in the hospital was about 100. Many of these patients were able to get up in the day-time and were granted daily leave under special regulations. A few men refused to submit to the necessary discipline and were discharged. The majority, however, expressed themselves as being very satisfied with the treatment they were receiving. The Directors state that it has been a great pleasure to the members of the staff to work for these patients.

The only change on the honorary staff was caused by the resignation of Dr. J. E. V. Barling, Honorary Assistant Pathologist. Several members of the honorary staff returned during the year from active service and three members returned after leave of absence granted on account of ill-health. Suitable reference is made in the report to the death of Dr. H. Guy S. Warren, formerly the Honorary Assistant Ophthalmic Surgeon. Paragraphs are added dealing with the work of the Medical Superintendent, which was particularly strenuous, with the resident medical staff, with the massage staff, with the Social Service Department and with the ambulance work.

Many years ago some private wards were instituted in the hospital for use by persons under certain definite conditions. More recently these wards have been reserved for nurses, medical practitioners, medical students and military officers. The Board has now determined that the private wards shall in future be available only to members of the hospital staff, to students in attendance at the hospital, to naval officers and to clergymen.

The Nursing Staff.

The Matron, Miss Newill, obtained leave of absence in June, 1917, to enable her to undertake war service. The Board secured the services of Miss Phyllis Boissier, who had returned from the war with a Royal Red Cross to her credit, as Acting Matron. Early in 1919 Miss Newill resigned her position and Miss Boissier was appointed in her stead. The Board places on record its appreciation of the valuable services rendered during a period of fourteen years by Miss Newill.

The average number of nurses in the hospital during the year under review was 212. During the influenza epidemic a great strain was thrown on the nursing service. Generous help was rendered by the members of the Voluntary Aid Detachment, by medical students and by others. The Board record with great regret the death of one nurse from influenza. They also express their high appreciation of the loyalty and good service rendered by the staff.

Administration.

The Directors refer in sympathetic terms to the death of two of their number, Sir James Fairfax and Sir Phillip Sydney Jones. They publish a short eulogy of the work of each. They also refer to the death of Alderman English and to the retirement of the Honourable Sir Albert Gould. Mr. Hugh Dixson, Senator the Honourable Sir Albert Gould, Mr. F. D. Kent, Dr. Cecil Purser, Mr. D. Benjamin and Mr. Vicars sought re-election to the Board of Directors. For the eighteenth year in succession Professor Sir Thomas Anderson Stuart was elected Chairman of the Board. Great regret is expressed that Sir Thomas was prevented from devoting himself as fully as in previous years to the important duties of his position, owing to ill-health. During the course of the year it was decided that a third honorary executive officer should be appointed. The necessary amendment of the by-laws was effected and, in accordance with the amended by-laws, the Honourable H. E. Kater. M.L.C., was appointed Vice-Chairman.

On June 12, 1918, a public meeting was held in the Town Hall, Sydney, primarily for the establishment of a fund called the Jubilee Fund and incidentally for the institution of an organization to be known as the Royal Prince Alfred Hospital Auxiliary. The objects of this organization were to secure a more widespread sympathy with the work of the hospital, to obtain additional funds and to provide additional voluntary service. A council was formed and a number of comforts funds and other societies were affiliated. Within two or three months of its institution interim sectional committees were in existence for the following purposes: (*i.*) to establish a tea-room in the hospital for the use of students, patients and their friends; (*ii.*) to supply flowers for the wards, to assist in the improvements of the grounds and to obtain gifts of eggs, jams, groceries and the like; (*iii.*) to assist the existing committee in stocking the patients' library; (*iv.*) to conduct a kindergarten in the children's wards and (*v.*) to provide linen, drapery and similar material for use in the hospital. In addition, a publicity committee and a finance committee were appointed. Various devices were introduced for the purpose of raising funds, with the result that nearly £27,960 were collected in the course of eight months.

Finance.

The total receipts during the year amounted to £69,769. Of this sum, £14,350 are entered as extraordinary receipts and include payment for maintenance by the Department of Defence, etc.. The Government of New South Wales contributed a special grant of £16,750, an ordinary subsidy of £4,750, a bed subsidy of £11.700, a contribution to the Venereal Diseases Clinic of £2,000 and a contribution to the Anti-tuberculosis Dispensary of £400. The total, £35,600, is £2,500 less than the total of the previous year. The public contributed £7,469 and the patients £7,562. The miscellaneous receipts amounted to £4,826, bringing the total receipts up to £69,797, or £8,554 less than the amount expended. It appears that the sum of £2,500 was paid for the equipment of the wards for the reception of military patients. This amount has to be repaid by the hospital. It is claimed that the dislocation of the hospital by the advent of the influenza epidemic resulted in a loss of revenue of approximately £1,000. The patients' contributions for the year, however, were slightly more than in the previous twelve months. The expenditure suffered an increase, largely on account of the higher cost of wages and the increased cost of living. Coal and electric light, bedding, linen and hardware—in fact, everything—cost more during the year than during the preceding years. The Board of Directors is appealing to the Government to supply an additional £8,000 to £10,000 per year, to enable it to carry out its work in a satisfactory manner. From the figures published, it would appear that the cost of maintenance per patient was £9 15s. 0½d., or, expressed in another way, was 9s. per patient per day.

A special paragraph is devoted to the Endowment Fund, another to the Samaritan Fund, a third to the W. G. Robinson Bequest and a fourth to the Hospital Saturday Fund.

Hospital Buildings.

A description of the new kitchen block, of new work undertaken in connexion with the drainage of the institution and of various other structural alterations effected during the year is appended. In *The Medical Journal of Australia* of November 1, 1919 (page 384), we published an account supplied by Dr. H. J. Clayton, the Medical Superintendent, of the new kitchens and of the X-ray Department.

A number of minor matters receive attention in the final chapter of the report.

MEMORIAL TO PROFESSOR SIR BALDWIN SPENCER.

A memorial to Sir Baldwin Spencer has been organized in the University of Melbourne and Mrs. Ada M. a'Beckett, M.Sc., has been acting as Honorary Secretary to the Fund. The subscription lists close on March 20, 1920. The Fund will be devoted to a prize or prizes in zoology in the University of Melbourne. The presentation will be made to Professor Sir Baldwin Spencer on March 26, 1920, at 4 p.m., in the biological lecture theatre at the University. All subscribers are invited to be present.

The Medical Journal of Australia.

SATURDAY, MARCH 20, 1920.

Hospital Standardization.

In October of last year the members of the American College of Surgeons passed in review the work that had been accomplished during the year in regard to the proposal to establish a standard for hospital practice. For a long time it has been recognized in America as elsewhere that the functions of a hospital need definition and that the work accomplished in these institutions should be subjected to a rigid criticism in order to guarantee that the sick poor are receiving the best attention that can be provided. It has become a practice to select medical practitioners of high qualifications and experience to undertake the work in hospitals. This work has been conducted in the past in full view of the medical profession, but no means have been devised to control the excellence of the work or the faithfulness with which the responsible physicians and surgeons have served their patients. Moreover, the hospital records have rarely been utilized for the advancement of medical science and only too often have these records fallen short of the ideal. The public is offered an annual report drawn up by the board of management with a view to enlisting the sympathy of the charitable. The chief theme is the need for more money. Incidentally the managers put forward as a recommendation for support a statistical statement of the number of persons treated both in the wards and in the out-patients' departments. The medical report, as a rule, deals entirely with numbers and contains nothing that can be used for the benefit of future patients. Competition between hospitals usually rests on the size of the clientèle, on the mortality and, it must be admitted, on the ability of the board of management to spend money. It is not suggested that the lay public is a good judge of efficiency in hospital practice, nor that the reports should be scientific dissertations. The public and especially those who economic position gives them a right to use hospitals, should receive the assurance of the medical profession that the work conducted during the year has been subjected to a searching inquiry and has been found to come up to standard.

Over two years ago the American College of Surgeons determined to set up a minimum standard for hospital practice. The aid of the sharpest brains was invoked and much careful thought was expended on the elaboration of a programme which would be practicable, just and sufficient. It was recognized from the first that hospitals existed for the benefit of the sick poor, for the education of the medical profession, for medical research and for the education of the public in matters appertaining to public health. It was held that any proposals that might be put forward, must be so little costly that they could be carried out in the small hospital with fifty beds as easily as in the giant institutions with two thousand beds. The proposals must cover a means of insuring competence in the members of the medical staff, must provide for the keeping of full and proper records of every case of illness and injury treated and must include a method of control. It was an easy matter to find agreement concerning general principles. Every medical practitioner admits that the hospital service must be conducted on sound lines and that the welfare of the patients must be paramount. Little by little the details of a minimum standard were evolved, not by the inspiration of a single individual, but by the consensus of opinion of the members of a committee appointed to deal with the question. The term hospital standardization was introduced to imply a scheme for bringing all the hospitals into line in regard to the minimum standard. The first year was used to devise the standard. During the second year the staff members of the College made a personal investigation of 671 hospitals with 100 or more beds. They explained to the managers of these hospitals the significance and details of the standard. They inquired into the causes of existing short-comings and they endeavoured to secure the enthusiastic co-operation of the medical staffs of the several institutions. The demands made for every hospital include the following items. In the first place there must be organization of the staff of resident and visiting medical officers. Membership of the hospital staff is to be restricted to practitioners who can demonstrate their competence in their special

branches of practice and who are known to be worthy in character and in matters of professional ethics. The division of fees is prohibited. In the second place the staff is required to draw up rules governing the professional work in the hospital. Meetings of the members of the staff are to be held at least once a month. At these meetings frank discussion of mistakes, of failures and of difficulties are to take place. The staff is to analyse the clinical experience in the various departments of the hospital and there is to be mutual co-operation for the benefit of the patients. The discussions are to embrace unsolved problems in connexion with the pathology of conditions dealt with in the institution and also selected cases of special interest. The third condition is that accurate and complete case records of all patients are to be prepared and kept in an accessible manner and place within the institution. It is held that scrappy notes, compiled hastily for the moment's use and destined to be buried in some spider-infested cupboard, are out of place in a modern hospital. We would call attention to an American practice of great value in this connexion. The resident medical officer or the visiting physician or surgeon dictates the notes to a paid stenographer or stenotypist. The transcript, neatly typed on suitable forms, is either filed in a special cabinet or enclosed in a loose leaf cover, which can be kept in consecutive numeral arrangement on shelves in the hospital library. The records must contain every detail concerning the illness or accident, so that nothing is missing when the records are consulted for future research or for future treatment of the same patient. In the last place the scheme includes the provision for clinical laboratory work, both in connexion with the actual diagnosis and treatment of affections in patients and with research. The members of the committee have asked for reports from hospitals, in order to ascertain whether the standard is being followed or not. The reports include details of the number of infections after operation, the number of deaths and the number of patients relieved, the number of incorrect diagnoses, as controlled by autopsy *in vivo* or *post mortem*, the number of consultations held, the number of working diagnoses prior to operation and the number of complete examination of patients. In many cases the results are not creditable to the institutions. It is essential that the managers of the hospitals should be aware of the way in which the work is being conducted in their institutions. These records reveal the state of affairs.

If the introduction of a hospital standardization is possible in America, it must be possible in Australia. A preliminary inquiry should be made of all the hospitals in the Commonwealth to ascertain how many conform to the minimum demands. The members of the medical staffs of the institutions should then be given a year to remedy existing defects. At the end of the period a second investigation should be undertaken and the results tabulated. It would be in the public interest if lists of hospitals were published, arranged in two groups, those which come up to the minimum standard and those which fail to satisfy the demands.

INDUSTRIAL NURSING.

Measures taken to safeguard those employed in industries against illness and accident have been developed in Great Britain in many directions by the Factories Department of the Home Office. It is regarded as an important duty of the Government to supervise industrial employment from the point of view of hygiene and preventive medicine. In the Commonwealth this aspect of public health has been neglected, largely because the departments of labour and industry have not included a medical branch. Occasional activity has been manifested in this direction by the appointment of commissions or committees of inquiry. At present an extensive investigation is being undertaken by a commission into the industrial diseases of miners at Broken Hill under the direction of Professor H. G. Chapman. These sporadic efforts, however, are incapable of replacing the permanent control which can be exercised by the medical officers of the responsible departments. We have advocated the institution of this chapter of hygiene on several occasions. Closely associated with the work of supervising the hygienic conditions of factories and works, of watching the health of the employees in all large industrial undertakings, of controlling the housing conditions of workers from the aspect of hygiene and of ascertaining the degree of risk associated with the so-called dangerous trades, is another line of attack worthy of support. In the United States of America there has arisen, more or less as a direct result of the success attending the institution of public health nursing, a service of industrial nursing. With the withdrawal of the American Army from the battle fields of Europe, there has been a constant stream of discharged army nurses who are seeking a channel of useful employment. These women are often little inclined to re-enter the sphere of ordinary hospital or private nursing. Many

have had some training in public health nursing and recognize that with well-directed assistance they should be able to participate in a larger theatre of activity than that of working for the individual. In other words these far-seeing nurses are aiming at prevention of disease, as are so many modern hygienists. Simultaneously with the manifestation of this desire, the Red Cross Society has liberated the sum of $100,000 for the purpose of establishing a scholarship fund to enable nurses to secure training in public health nursing. Anne H. Strong has developed the idea of industrial nursing and has endeavoured to raise it to a level of practicability.[1] She, like other pioneers, is inclined to allow her enthusiasm to run away with her, by extending the sphere of action of the industrial nurse too far into the domain of medicine. Her main arguments used, however, are quite sound. The industrial nurse is to be engaged by employers to render first-aid to the workmen, to offer assistance day by day whenever any services are needed, to watch for indications of illness or physical disability in the workers, both at the places of work and in the homes and to collaborate with the medical officer in anticipating serious illness and in preventing the spread of infections. She points out that nurses who undertake this form of work, must be of sound general education and must undergo special training to equip them for these duties. There are at present fifteen training centres in the United States. The curriculum for public health nursing includes bacteriology, hygiene, sanitation, nutrition, the principles of sociology, psychology and the like. Nurses can be equipped for field work by adequate instruction in elementary sciences. It is necessary to insist that the nurse should work on the instruction of a medical hygienist, for it is impossible for any one who has not passed through a complete medical course, to be able to identify disease, to trace the source of infection and to institute measures of treatment and amelioration. We have at present in Australia many returned Army nurses whose experience, general training and standard of education would fit them for this kind of activity. Training schools for this particular form of nursing and field work could be equipped, if the necessary funds were forthcoming. The Department of Repatriation should be prepared to provide the means to enable the returned nurses to undergo the necessary training. And finally a lead from the Commonwealth Government or from the individual State Governments would probably suffice to induce industrial firms to engage medical officers and nurses to carry out the duties suggested by Sister Strong.

FISH INFESTED WITH PARASITES.

A question of considerable practical importance has been raised by Dr. W. Watkins-Pitchford, the Director of the South African Institute for Medical Research. He has been asked to express an opinion whether certain common fish should be regarded as unwholesome food when infested with a parasite. The fish in question are *Kabeljaauw*, a form of cod (*Sciæna aquila*), and Cape salmon (*Otolithus acquidens*). Both these fish are frequently infested with a parasite in the form of a cyst to which is attached a long, slender, worm-like tail. The parasite is widely distributed among these fish and at times the infestation is very heavy. Dr. Watkins-Pitchford has identified the parasite as *Tetrarhynchus erinaceus* in the larval stage.[1] The cyst found in the flesh of the fish is usually spheroidal or ovoid in shape, from 2 mm. to 8 mm. in its longest diameter and of opaque, whitish appearance. The so-called "tail" is a prolongation of the posterior pole of the cyst in the connective tissue planes of the musculature of the fish. It can be withdrawn from its bed as a delicate elastic filament. It is known that the cestode *Tetrarhynchus* is an intestinal parasite of sharks and rays. It is suggested that the shark eats the *Kabeljaauw* and becomes infested with the tapeworm in consequence. The ripe proglottides are passed in the dejecta of the shark and are consumed by the *Kabeljaauw*. Dr. Watkins-Pitchford points out that in spite of careful and prolonged observation, not a single instance of the human alimentary canal being infested with this parasite has been noted. He is therefore justified in assuming that the tetrarhynchid tapeworm is not parasitical for man. In view of this finding, he has arrived at the conclusion that the flesh of fish infested with the parasite is neither unwholesome nor unfit for human food. The fish, even when the infestation is extreme, are apparently healthy, are not emaciated nor affected with pathological changes, such as hæmorrhages. He argues further that the common human tapeworms represent the adult parasite in its sexually mature form; the cysticercus in the lower animals is in the immature, larval or asexual form. It is therefore improbable that the cyst form of *Tetrarhynchus* occurs in the human being.

The problem has a very wide application. In the first place, before Dr. Watkins-Pitchford's views can be endorsed, it must be shown that the parasite, from its bio-chemical aspect, is harmless to man. It will be necessary to have information concerning the effect of heating on the chemical composition of the cysts and their filaments. From the biological point of view, it should be born in mind that a parasite may harbour micro-parasites and, while the tapeworm may exhibit indifference to man as a possible host, it might be the vector of a parasite pathogenic to man. In the case of the *Kabeljaauw*, there appears to be a general tendency among the inhabitants of the coastal regions of the Cape to regard the fish with disfavour and to refuse it as an article of diet. It is, of course, possible that the prejudice is unreasonable and that it would be economically advisable to employ even heavily infested fish as articles of diet. *Tetrarhynchus* is not infrequently found in common fish, such as cod, haddock, turbot, sole, etc., in European waters (Cobbold). An investigation is at present being conducted on the nature of certain forms of fish poisoning in the Pacific islands. It is by no means excluded that the toxic quality of these fish, which apparently is not persistent, may be traced to an infesting parasite. Until more information is available, it would be wise to adopt a cautious attitude and to rule out of a human dietary all fish perceptibly infested with a cestode.

[1] *The Journal of Industrial Hygiene*, October, 1919.

[1] *The Medical Journal of South Africa*, December, 1919.

Abstracts from Current Medical Literature.

ORTHOPÆDIC SURGERY.

(105) Peripheral Nerve Injuries.

Charles H. Frazier (*Annals of Surg.*, January, 1920), in dealing with the surgical aspects of reconstruction of peripheral nerve injuries, states that it is wise to wait for three months after the wound has healed. In many instances this is found to be about six months from the time of injury. In the absence of signs of spontaneous recovery and substantial evidence of complete nerve interruption, further delay is inadvisable. Neurolysis was performed in 20% of the author's cases. This procedure is clearly indicated when the nerve responds to faradic stimulation. In a number of cases there is an associated sclerosis or fibrosis of the nerve which in itself may inhibit regeneration. In the presence of a spindle-shaped neuroma the final decision must rest upon the time which has elapsed between the injury and the operation and upon whether the nerve responds to faradism. In the actual operation of neurolysis the nerve should be absolutely freed from callus and, if necessary, an attempt should be made to remove thickened portions of the sheath, but not to lay bare the fasciculi. In the reconstruction of the wound the ideal and natural bed is in an intermuscular plane or between a muscle sheath and the deep fascia. The great problem in peripheral nerve surgery is that involved in resection and the bridging of defects. The author dismisses a number of methods as unjustified by clinical results. The author has resorted to resection of the humerus on two occasions; once when there was a defect in two nerves and once when there was a defect in three nerves. Stretching of nerve trunks is a valuable way of dealing with defects. This may be done by making use of the posture of the limbs or in cases where the defect is great, the nerve bulbs are sutured together with strong silk and the stretching from the return to the natural posture enables the suture to be done at a second operation about four weeks later. Nerve transposition is a useful procedure, particularly in the ulnar and radial nerves. It may be used with advantage in the case of the common peroneal, by transposing the nerve to a position superficial to the hamstring tendon with the limb in flexion. Nerve transplantation should only be used as a last resort. In the author's series of 150 cases tranplantation was done in seven instances and in two it is thought that a good result will eventuate. In regard to the actual technique of resection, emphasis is laid on the necessity for obtaining nerve ends with healthy fasciculi free from the grasp of cicatricial tissue. In making successive sections of the nerve to obtain satisfactory ends, a safety razor blade is preferred to a scalpel or to an ordinary razor. The divided nerves are sutured with chromic gut through the whole nerve and with four to eight epineural stitches of the finest silk.

(106) Early Orthopædic Treatment of Hemiplegia.

The prevention of deformity and disability in hemiplegics by early surgical and orthopædic measures has not received the attention it deserves. The authors, J. Byrne, A. S. Taylor and S. W. Boorstein, contribute respectively the neurological, surgical and orthopædic aspects of the subject and record results of treatment especially in the case of disabilities from war injuries (*Surg., Gynec. and Obstet.*, October, 1919). The lesions may be due to direct trauma or to compression as a result of hæmorrhage, œdema, *et cetera*, or both factors may be contributing. The main problem from the point of view of early surgical interference is the relief of intracranial pressure. Byrne studied both clinically and experimentally the respiration as an indication of increased pressure. The sequence of events most usually observed was: fall in blood pressure, enhanced respiratory movements, rise in blood pressure, apnœa, fall in blood pressure and so on in that order. From the moment the medullary mechanism gives unmistakeable indications of being unable to cope with increased intracranial pressure, surgical interference is to be regarded as a conservative measure. An early operation even if its purpose be merely to effect decompression, may so relieve focal compression as to restore circulation and thus to conserve function and structure. At the actual operation the method employed is subtemporal decompression with evacuation of the clot. A piece of bone 5 to 7 cm. in length is removed, the *dura mater* is opened and, if the clot is in the brain, a grooved director or a Cushing needle is inserted. An unconscious patient stands the operation without an anæsthetic very well. In discussing the treatment of paralysed limbs Boorstein deplores the fact that no attempt is made to overcome contracture and prevent deformity. In collaboration with his co-contributors he found that immediate application of the splints is the best procedure. The lower limb is encased in plaster from the toes to the perineum. The foot is placed at right angles to the leg and the knee is extended. In splinting the upper limb, the arm is held abducted at the shoulder; the elbow is placed at an angle of about 135°; the forearm is put in full supination. The hand is difficult to manage, but dorsiflexion of the wrist with slight flexion of the metacarpo-phalangeal joints and extension of the fingers appears to be the best position. Massage is commenced in 2 to 3 weeks after the attack and in this the character of the manipulations is important. In the spastic groups *effleurage* should be used; in the flacid groups *pétrissage* and *tapotement* are the better procedures. Exercises are given three weeks after the operation and symmetrical movements are used with the idea that movements of the affected limb are easier to perform when the good limb is moving. It is to be understood that electricity indiscriminately used increases the hypertonus it is intended to combat. When contractures have developed, gradual stretching in plaster or in splints is the usual treatment, but in some cases tenotomy is necessary.

(107) Compression of the Lower Trunk of the Brachial Plexus by a First Dorsal Rib.

The possibility of the first thoracic rib causing pathological changes in the brachial plexus is not a new idea, but John S. B. Stoppord and E. D. Telford (*Brit. Journ. Surg.*, October, 1919) draw attention to its frequent occurrence. In two years ten cases were met. Eight of these are described as idiopathic and two as traumatic. The symptoms are those of cervical rib. All the patients had neuralgic pains along the ulnar border of the forearm and this was increased by depression of the shoulder girdle. Paresis and atrophy, chiefly of the intrinsic of the hand, appeared about the same time as the pain. In all cases objective sensory disturbances occurred, particularly in protopathic sensibility. Trophic and vaso-motor phenomena were very constant. The causation of the onset of the symptoms in many cases appeared to be trauma. In others paralysis involving the muscles which support the shoulder girdle, allowed the upper roots of the brachial plexus to be stretched and the lower roots to come into contact with the first rib. The treatment may be divided into operative and non-operative. The essence of the non-operative treatment is the development of the *trapezius* to support the shoulder girdle in a more elevated position. The traumatic cases improve rapidly by this form of treatment. Operative treatment should be considered when no improvement is seen after three or four weeks' treatment by electrical stimulation, exercises and massage. E. D. Telford describes an operation for the removal of the first rib.

(108) Apophysitis of Os Calcis.

Paul Bernard Roth (*Proc. Royal Society of Medicine*, August, 1919) records a case of apophysitis of the *os calcis* which had been treated for some years as a double flat foot. For two years previous to examination the patient had pains in his feet and ankles up to his calves when he ran; he could not walk for more than a quarter of an hour without resting. Various supports for his feet had been used, in addition to electric baths and massage. Alteration of the boot did not alleviate the trouble. On examination, the feet were found to be well formed, but the patient walked with a slightly valgoid gait. There were tender spots at the back of the heel in the *tendo Achillis* and particularly on each side of the attachment of the tendon. The skiagram disclosed a cartilagenous gap,

with irregular ossification between the upper part of the epiphysis and the *os calcis* and some rarefaction of the bone at this point. This confirmed the diagnosis. Prolonged rest in bed for six weeks was prescribed, after which gradually increasing the periods of exercise were favoured. The patient's boots were raised 0.6 cm. on the inside of each sole and heel, with a rubber disc to the heel and a piece of sponge rubber worn inside the boot under the heel.

MORPHOLOGY.

(109) Artificial Production of Monsters.

In the *Anatomical Record* (November 20, 1919) W. M. Baldwing presents his results upon the artificial production of monsters conforming to a definite type by means of X-rays of a fixed amount acting upon fertilized frogs' ova all of the same stage of development. Three striking effects of possible significance have been noted. (1) The effects are rarely seen immediately upon completion of the exposure, but always at some subsequent time. (2) The general effect is to produce a slowing-down of all the processes of differentiation, leading, when the dose is sufficiently great, to actual cessation and death. (3) There is a tendency towards the establishment in the irradiated adult body of a chronic disease characterized by a sluggish process of repair. The singular conformity of the tadpoles to a type of defect is one of the most remarkable features. They are generally reduced in length, breadth and thickness, the head is dwarfed and projects but little from the trunk. The usual prominences of the brain, of the suckers and of the gill tufts are absent and but little can be seen of the eye. The activity of these embryos is considerably reduced and their swimming movements are feeble and spasmodic. The specimens demonstrate histological changes which indicate a pathological condition of the cells of the *Anlagen*. These changes make their appearance subsequent to a latent period during which external features, as well microscopical, are normal. With the formation of the blastodermic vesicle, variations both in the character of the cells and in their manner of arrangement become pronounced. The cells assume a spherical shape and fit less closely, leaving large intercellular spaces. The blastodermic vesicle contains cell detritus or accumulation of protoplasm at times with a degenerated nucleus. At later stages this mass of detritus becomes so great that a distinct stratum is formed and is particularly noticeable in the more dependent portions of the body cavities. The phenomena of cytological disorganization of the central nervous system are not restricted to any part of that tube and appear at an early date. Stratification of the cerebral cortex is much delayed. Changes in the heart and blood vessels are very marked and are possibly correlated with the lowered vitality and sluggish movements of the embryos. In none of the embryos was the heart tube differentiated into a muscular layer and throughout the body the blood vessels seemed overdistended. There was a reduction in number of the smaller vessels of the trunk. The epidermal cells were irregular in size and arrangement, so that the formation of a stratified layer was only imperfectly effected. That all tissues of the embryo are affected is denoted by the pathological appearances of the cells and of the nuclei, by the presence of nuclear and of cytoplasmic extrusion and by the defective morphology of their organs. In summarizing the facts having a biological significance it is noted: (*i.*) that the mitotic process may be either accelerated, retarded or made abnormal; (*ii.*) that there appears to be a susceptibility to X-rays, not alone of chromatin, but of cytoplasm as well; (*iii.*) that the phenomena of differentiation and of growth may be accelerated, retarded or made abnormal; (*iv.*) that a decidedly selective action of X-rays on adult types of tissues has been noted; (*v.*) that definite changes of a chemical nature, both in the protoplasmic content of cell bodies and, more specifically, in enzymes, may be produced by X-ray energy.

(110) The Causal Factor in the Hatching of the Chick.

In the *Anatomical Record* (October 26, 1919), A. G. Pohlman discusses this question of the causation of hatching in the chick with particular reference to the *complexus* muscle, to which Keibel has ascribed the function and power essential to breaking through the shell. The writer finds that the *complexus* attains a maximum development before and at the stage of hatching, while after the chick is hatched, it undergoes a progressive atrophy up to about the eighth day. Before the time of hatching this muscle becomes infiltrated with lymph which attains its maximum with the complete injection of the yolk and the discharge of the allantoidal blood into the systemic vessels. In this condition the muscle is physiologically incapacitated to undergo any pronounced contraction and one reason for the marked infiltration is undoubtedly its relaxed condition. It seems that the active muscular agency in breaking the shell is a change in posture of the head and upper cervical vertebrae brought about by the *biventer* and *spinalis* muscles. The reflex mechanism which involves this muscle system, is probably a respiratory reflex not dependent on a demand for oxygen, but upon distension of the abdomen and particularly the *levator ani* muscle, brought about by the rapid injection of the yolk sac at this stage. The enormous lymph infiltration is a result of rapid absorption, partly due to pressure and partly to awakened glandular activity as positive factors and to the failure of the kidneys due to pressure or failure of this gland to take care of the excess water in birds, as negative factors. Not until respiration sets in does the general œdema disappear. This will imply that the greater part of the excess water in birds is excreted by the lungs and also accounts for the ability of the new born chick to go at least three or four days without water.

(111) Persistent Left Duct of Cuvier in Man.

J. H. Smith records a case of persistence of the left duct of Cuvier and the related proximal ends of the pre- and post-cardinal veins in a male of about thirty years of age (*Anatomical Record*, November 20, 1919). As far as could be ascertained a similar anomaly of comparable degree has only been observed once previously. After removal of the heart the orifice of the coronary sinus could not be found, but a venous trunk, about the size of a normal coronary sinus, was seen leaving the pericardial sac in a fold of the parietal layer. It was formed of three small tributaries from the dorsal surface of the heart near the base of the left auricular appendage. The resulting common cardiac vein followed the usual path of the vestigial fold of Marshall, passing anterior to the left primary bronchus and left pulmonary artery to a point anterior to the aortic arch, where it united with the left superior intercostal vein. Normally the cardiac portion of the left duct of Cuvier forms the coronary sinus, while the distal part forms part of the vestigial fold of Marshall.

(112) Persistent Left Superior Vena Cava in an Adult.

Persistence of the left superior *vena cava* is fairly common in still-born children, but only ten cases of persistence in the adult have been recorded. A. P. Hufmire and G. C. Bower report a case in a male aged 79 years (*Anatomical Record*, November 20, 1919). The heart was normal in size and showed no defects in the interarterial or inter-ventricular septa. The aorta and inferior *vena cava* were normal. The external jugular veins were entirely absent. Both right and left superior *venæ cavæ* were formed by the junction of the subclavian and internal jugular veins of the corresponding sides. About 8 cm. above the base of the heart a small vein, homologous to the left innominate, ran across obliquely and connected the two *cavæ*. The left superior *vena cava* terminated in the coronary sinus, lying in the position of the oblique vein of the left atrium (vein of Marshall). The enlarged coronary sinus emptied as usual into the right atrium below the valve of the inferior *vena cava*. The condition may be interpreted as a simple persistence of the lower part of the left anterior cardinal vein which did not lose its connexion with the common cardinal vein on the left side, although the cross anastomosis between the two anterior cardinal veins was formed.

COLLECTIVE INVESTIGATION BY MEDICAL PRACTITIONERS HAVING EXPERIENCE OF THE AUSTRALIAN TROPICS, FOR CONGRESS, 1920, BRISBANE.

We have been requested by the Executive of the Australasion Medical Congress, Brisbane, 1920, to publish the following memorandum and *questionnaire* for the general information of members. This document will be distributed in suitable form for replies to members residing in the tropical areas of Australia. We would ask anyone interested in this matter who does not receive a copy in due course, to communicate with Dr. J. S. C. Elkington, the Honorary Secretary of the Pubic Health Section, Federal Quarantine Department, Brisbane.

At the Sydney meeting of the Australasian Medical Congress in 1911 it was resolved that it be a recommendation that the principal subject for discussion by Congress at the Brisbane meeting in 1917 should be the question of the possibility of the permanent occupation of tropical Australia by a healthy, indigenous white race and the conditions conducive or essential to such occupation. The 1917 Congress was rendered impossible by the great war, and it is now necessary that effect be given to the recommendation by the Congress which meets in Brisbane from August 23 to 28, 1920.

It is almost superfluous to urge on thinking Australians the importance which attaches to any organized effort towards settlement of this vital question. About one third of Australia is in the tropics and in a world seething with the unrest born of great wars, famine, pestilence and social disruption, it is imperative for the immediate future of our country that an authoritative opinion should be available to show whether or not white races can be expected to thrive and multiply, at least in many fertile portions of these vast and sparsely-occupied areas. Should the reasoned outcome of available evidence indicate a negative, it is essential that the Australian Government should be in a position to understand the immediate physical problems which would require to be provided for in the event of military operations or military garrisoning, or the deliberate introduction of a coloured population under restricted conditions, becoming necessary in tropical Australia. Should the opinion be positive, then all the incentives to national progress will combine to secure the formulation and pronouncement of the conditions under which a white population can be maintained and to urge on rapid and systematic settlement and development. The problem is unique, for in no other country in the history of the world have millions of square miles lain virgin, with practically no coloured population to infect white newcomers with its diseases, or its social and moral weaknesses. The problem is pressing, for it involves the continued possession by a sparse population of vast areas of productive land in the face of a profoundly disturbed world, hungrily seeking food and lands for its surplus peoples and with the sword not yet out of its grasp.

The series of questions appearing below embodies the result of considerable thought. The questions have been drafted by Australian experts in tropical diseases and in public health and have been revised and discussed by a specially appointed sub-committee of the Executive of Congress. The sub-committee earnestly asks the co-operation of the Australian medical profession and especially of all those who have had professional experience in the Australian tropics and sub-tropics. They recognize the difficulty of accurately and fully answering certain of the questions, but they trust that all necessary time and pains may be devoted to making the answers accurate and full. Information of a personal or private nature will, of course, be handled confidentially and impersonally and no hesitation on this score need stand in the way of frank and full statement of the case as it appears to each individual observer who forwards a return.

Replies should be forwarded to the Secretary, Sub-Committee Tropical Investigation, B.M.A. Buildings, Adelaide Street, Brisbane. They will be examined by the Sub-Committee with the assistance of specialists and will be presented to Congress in the form found most suitable.

1.—Personal Details.

Name (in full) .....
Address .....
Age .....
Born at .....
Length of residence in Australian tropics (state places of residence and period of residence at each) .....
Residence in countries outside Australian tropics (state places and period of residence at each) .....
Personal health whilst—
(*a*) In Australian tropics
(*b*) Countries outside Australian tropics
Health of wife whilst—
(*a*) In Australian tropics
(*b*) Countries outside Australian tropics
Health of family whilst—
(*a*) In Australian tropics
(*b*) Countries outside Australian tropics
State nature and approximate date of any serious illness.
From personal experience, do you consider that the climatic conditions of those parts of the Australian tropics where you have lived have affected the health or physical welfare of yourself or your family either—
(*a*) beneficially?
or
(*b*) deleteriously?
Do you consider that your capacity for work has been detrimentally influenced by residence in tropical or sub-tropical Australia? (Any details or remarks in this connexion will be of special value.)

2.—General Inquiry.

I.—Physiological.
1—Opinion of physique in general of people living in your district
The physique of people, if possible, contrasting with other States or countries with which you are acquainted
(*a*) Men
(*b*) Women
(*c*) Boys
(*d*) Girls
2—Do you consider that the climatic or other conditions exercise any marked influence beneficial or otherwise on the
(*a*) Physical well-being
(*b*) Growth (of adults and children)
(*c*) Capability for work
3—Do you attribute any physiological aberration or abnormalities directly
(*a*) To climatic conditions
(*b*) To the conditions of living
4—Have you noticed any tendencies towards deterioration in children and adolescents?
(*a*) Between 2 and 5 years of age
(*b*) Between 6 and 14 years of age
(*c*) Between 15 and 18 years of age
(*d*) Amongst locally-born children of any age
(*e*) Amongst children of the second or later generation of locally born?
5—Do climatic conditions affect new-comers to a greater extent than old residents?
6—What is the average age of the commencement of menstruation?
The average duration
The age at menopause
(State approximately the number of inquiries.)
7—At what age do the secondary sexual characters appear in boys?
II.—Hygienic.
1—Housing: The nature of houses
(*a*) What is the proportion of wooden houses and galvanized iron houses in your district?
(*b*) Are the homes, in your opinion, suitable for the climatic conditions?
2—What is the nature of the water supply—tank, well, bore or other?
3—How is the nightsoil disposed of?
4—Is the clothing, generally speaking, in your opinion, suitable for the prevailing climatic conditions?

5—What proportion of the inhabitants are employed in hard manual labour?
(a) Outdoor
(b) Indoor
(c) Underground

6—Do manual labourers or any other class suffer from any disabilities in the pursuit of their employment on account of
(a) Climatic conditions?
(b) Hygienic conditions?

7—Do the inhabitants of your district, in your opinion, suffer from imperfect adaptation of mode of life to environment? For example: food, exercise, conditions and time for work, etc.

III.—Pathological.

1—What are the most commonly observed diseases in the district?

2—Does typhoid fever occur, its complications and mortality; what is its frequency? Can you attribute its occurrence to any special local conditions?

3—Tuberculosis; variety, *e.g.*, glandular, bone, phthisis, miners' phthisis, etc., frequency and chronicity
Does acute lobar pneumonia occur? What is its frequency and at what time of the year is it most prevalent?

4—Has tropical dysentery been observed?

5—Do exanthemata occur, as scarlet fever, measles, etc.?

6—(a) Malignant tumours in general, bodily regions affected, and prevalence
(b) Epithelioma in body surfaces exposed to sun and weather

7—Are rheumatic joint affections (sub-acute or chronic) common?

8—Is alcoholism common, and what are its sequelæ?

9—Have you observed cases of lead poisoning in children, affecting either
(a) The limbs
or
(b) Optic and ocular nerves
Are they common?

10—Is dengue fever common?

11—Are indefinite fevers met with?
If possible, furnish short clinical history

12—Is malaria prevalent? Which type of parasites causes the fever?

13—Are diarrhœa and enteritis commonly observed?
(a) In breast fed
(b) In artificially fed babies?
Is diarrhœa common in adults?
Can you attribute it to any special cause?

14—Are cases of sprue of frequent occurrence? If so, is there any apparent connexion with particular localities, or is any special age, class, or occupation particularly involved?

15—Which intestinal parasites are found?
Is anchylostomiasis prevalent? State the symptoms observed
Are cases in adults frequent?

16—Is filariasis common? What clinical manifestations are presented?

17—What type of skin diseases can be observed in the district? State specially the prevalence of keratosis and epithelioma of the skin, Barcoo rot, tinea, etc.

18—Is there any special incidence of eye diseases amongst children, as trachoma, etc.?
Have antifly measures had any appreciable result?

19—Are any of the following prevalent, *viz.*:—
Beri-beri
Climatic bubo
Heat exhaustion
Sunstroke (thermic fever)
Tropical neurasthenia

20—Do you consider cases of mental disease (a) congenital or (b) acquired, notably frequent or otherwise? If yes, do you attribute it to climatic or social conditions?

21—(a) Are venereal diseases prevalent amongst white persons to any greater or less average extent than in temperate regions with which you are acquainted?
(b) Do venereal diseases display any alterations of clinical type or manifestations as compared with temperate regions?

22—Any other diseases specially prevalent in the district

3.—General Conclusions.

A—Do you consider from personal observations that the course of an acute disease (such as typhoid) in persons of European descent, is modified or affected by the Australian tropical climate? (Detailed notes of cases bearing on this question will be of very great interest.)

B—Do you consider, from personal observation, that women of European descent, born or residing in the Australian tropics, are more liable to
(a) Post partum hæmorrhage
(b) Uterine inertia
(c) Other complications or pathological conditions attending or consequent on parturition
(d) Pelvic disorders not connected with parturition
than are women of similar descent and conditions of life residing in cold or temperate climates? (Detailed records of cases bearing on this question will be of very great interest.)

C—Do you consider that vitality and fitness for child-bearing amongst white females is lessened by residence in tropical Australia? If so, does this tendency appear to be accentuated amongst the native-born women, or in second or later generations? Do you consider from your personal experience that the fertility of white females is affected in any way by residence in the Australian tropics?

D—Do you consider from personal observation that children of European descent, born or living in the Australian tropics, are specially liable to infantile diseases of any special kind?

E—What conclusion does your personal experience lead you to form concerning the future prospects of survival and physical well-being of a white population in tropical Australia without admixture with coloured races?

4.—Constructive Suggestions.

Can you suggest any specific alterations in the mode of living, personal or communal, as for example, habits regarding alcohol, hours of labour, diet, conditions of housing, periodical changes to cooler climates, or otherwise, which would in your opinion advantageously affect the possibilities of the permanent settlement of tropical Australia by a working white race?

University Intelligence.

THE UNIVERSITY OF SYDNEY.

An adjourned meeting of the Senate of the University of Sydney was held on March 8, 1920, at University Chambers, Phillip Street, Sydney.

The following letters were received: (1) from Lady Barton, acknowledging the resolutions in respect of the late Sir Edmund Barton; and (2) the Honourable James Ashton, M.I.C., accepting a seat on the Senate.

The Finance Committee transmitted to the Senate the annual financial statements for 1919 duly audited, together with the auditor's annual report.

On the recommendation of the Finance Committee the estimates of receipts and expediture for the year 1920 were adopted.

The degree of Ch.M. was conferred *in absentia* upon Mr. Michael Richard Flynn, M.B..

The following appointments *inter alia* were made:—

Dr. H. Priestley to be Acting Professor; Dr. Horsfall, Demonstrator in Physiology; Dr. Ingram, Half-Time Demonstrator in Physiology for one year; Dr. H. R. G. Poate Examiner in Anatomy.

The letter from the Royal Commissioners of the Exhibitioners of 1851 was referred to the Faculty of Science.

RETURNED MEDICAL OFFICERS' SOCIETY OF QUEENSLAND.

A meeting was held in the B.M.A. Rooms, Adelaide Street, Brisbane, on February 20, 1920, for the purpose of forming a Returned Medical Officers' Society for Queensland, in response to a letter circulated by twelve medical officers.

There were 29 returned men present, while apologies were received from seven others. Lieutenant-Colonel Espie Dods. D.S.O., M.C., was voted to the chair.

The Chairman considered that the objects of such a society should be: (*i.*) to promote social intercourse among members and to maintain service traditions and friendships, (*ii.*) to insure assistance, as far as possible, to Queensland medical officers disabled by their services and to the dependants of those who died on service, (*iii.*) to promote the interests and forward the welfare of members. He attached special importance to the need of the society, particularly in view of the coming Congress. It would not be a medical society, nor would it compete with existing associations, such as the British Medical Association.

After discussion, it was decided to form a society among medical officers who have returned from service overseas and among medical students who had interrupted their studies and had graduated after return. It was resolved that the objects of the Society be those set forth in the Chairman's remarks.

The election of office-bearers resulted as follows:—

President: Colonel G. P. Dixon, C.B.E..

Vice-Presidents: Colonel J. B. McLean, D.S.O., Lieutenant-Colonel Espie Dods, D.S.O., M.C., Lieutenant-Colonel Ross, D.S.O. (Townsville),

Honorary Secretary: Major J. J. Power, D.S.O..

Honorary Treasurer: Captain R. Graham Brown, R.A.M.C..

Members of Council: Colonel A. Marks, C.M.G., D.S.O., Lieutenant-Colonel E. Emslie Brown (Ipswich), representing country members; Lieutenant-Colonel D. A. Cameron, Major Eustace Russell, Major H. V. Foxton.

Honorary Auditors: Colonel D. Gifford Croll, C.B.E., Major E. D. Ahern.

A general discussion on eligibility for membership ensued. It was decided to consult the southern societies before admitting those who served in military hospitals or abroad, but who had not enlisted in the Army.

It was resolved that a circular be sent to all returned naval and military officers in Queensland including those who had served in the allied forces.

It was further resolved that the entrance fee be 5s., with a similar amount for the annual subscription.

Miss Ethel Byrne, M.B., Ch.M., 1918 (Univ. Sydney), of Newcastle Hospital, Newcastle, has been nominated for election as a member of the New South Wales Branch of the British Medical Association.

The Honorary Secretary of the New South Wales Branch of the British Medical Association wishes to inform the members of that Branch that a clinical afternoon will be held at 3 p.m. on Friday, April 9, 1920, at the Royal Alexandra Hospital for Children, Camperdown

Naval and Military.

HONOURS.

It has been announced in the *London Gazette* that a large number of medical officers have been mentioned in despatches for distinguished and gallant service and devotion to duty. Among the names are those of six medical officers of the Australian Army Medical Corps who have served in Egypt: Lieutenant-Colonel C. B. Blackburn, O.B.E., Major (temporary Lieutenant-Colonel) Bruce McNeil Beith, Major (temporary Lieutenant-Colonel) M. W. Cave, Major Ernest Kent Parry, M.C., Major Harvey Sutton, Captain C. R. Hodgson and Captain W. G. H. Tregear.

THE TREATMENT OF VENEREAL DISEASE.

A sub-committee appointed by the Board of Management of the Melbourne Hospital to consider the best means of providing facilities for treatment of venereal disease, submitted a report at a meeting of the Board on March 9, 1920. It is proposed by the sub-committee to equip a large out-patient department and to establish indoor accommodation for 40 patients. It is estimated that the cost of installation, including the necessary alterations, will be about £10,000 and that £8,000 per annum would be required for maintenance.

At the Alfred Hospital a new block to contain 20 beds for persons suffering from venereal diseases was erected in 1919 and will be opened shortly. The out-patient department will be continued without further extension at present. During the past two years 16,000 patients have received treatment in this Department.

VENEREAL DISEASES.

The following is a return of the notifications of venereal diseases received by the Department of Public Health of Western Australia during the last quarter of 1919:—

Disease.	Males. Civilian.	Males. Military.	Females.	Total.
Syphilis (primary)	7	1	0	8
Syphilis (secondary)	6	2	6	14
Syphilis (tertiary)	3	1	4	8
Syphilis (congenital)	0	0	1	1
Balanitis	1	0	0	1
Gonorrhœa	118	7	16	141
Chancroid	9	0	0	9
Granuloma	0	0	3	3

Correspondence.

RETURNED MEDICAL OFFICERS AND HOSPITAL APPOINTMENTS.

Sir: In pursuance of the policy of our Society as enunciated in *The Medical Journal of Australia*, August 23, 1919, and in view of the comments on the recent appointments to the honorary staff at the Melbourne Hospital, our Committee addressed the following letter to the Senate of the University of Sydney, to the Conjoint Board and to the Board of the Royal Prince Alfred Hospital, in order to define the attitude of our Society regarding the forthcoming elections to the honorary staff of the Royal Prince Alfred Hospital.

We wish to take this further opportunity of placing our policy before the profession at large in order to avoid any misapprehension or misrepresentation as regards the attitude of our Society.

Yours, etc.,

(Sgd.) A. MacCORMICK,
REUTER E. ROTH,
R. SCOT SKIRVING,
T. M. MARTIN,
THOMAS FIASCHI,
Vice-Presidents.

Sydney, March 15, 1920.

Dear Sirs: Our Society wishes to bring before your notice the claims of returned medical officers for special consideration when the question of filling the recently advertised honorary appointments at the Royal Prince Alfred Hospital comes up for decision, as many of the applicants will be men who have served for lengthy periods with the A.I.F. abroad.

We would ask that they be given marked preference over men who made no effort to serve their country, and that men who were officially rejected as unfit for service abroad be given second preference.

Many eligible men did some military work on "home service," but we consider they should not be given any preference on this account.

Several appointments were filled temporarily during the war and we would ask that the men holding them should not receive consideration on account of any special experience gained in these years.

In case it may be urged that while men were on service they had not the opportunities of fitting themselves for the special civil work demanded in these honorary appointments, we would point out that in such few cases

(if there be any) these men sacrificed their own personal gain for the welfare of the nation and if appointed now would soon obtain the requisite knowledge.

In most cases men have gained decidedly in special knowledge, either while serving in one or other of the big military hospitals, or after the armistice, by embracing the opportunities offered for study at the great British clinics.

When these appointments are being made we would also ask that the new applicants be considered along with those men up for re-appointment; for instance, there are seven assistant physicians for re-appointment and two new positions to be filled. We ask that the applications for these positions be grouped together and the nine appointments made instead of considering the seven re-appointments and then the two new ones. We are of the opinion that this would insure election of the men best fitted to advance the welfare of our clinical school and that seniority could be given according to their respective merits.

Trusting that our letter will receive sympathetic consideration,

We are, yours faithfully,
(Sgd.) REUTER E. ROTH,
R. SCOT SKIRVING,
T. M. MARTIN,
THOMAS FIASCHI,
Vice-Presidents of the Society of Returned Medical Officers of New South Wales.

THE CONTROL OF ALCOHOL.

Sir: In August next the medical men of Australia meet in congress in Brisbane. In October throughout Queensland a referendum is to be taken on the *Liquor Act*. Shall we (*a*) continue, or (*b*) let the State control, or (*c*) prohibition in 1925. There is a most cynical disregard of the great good effected, both in England and Australia, by means of early closing. The clergy are moving. Social reforms are moving. Cannot our Section of Public Health aid this movement? Control alcohol, abolish the grog shop and at once you strike at the root, direct and indirect, of most of the physical ills of the people. Does any man, in or out of the profession, question this?

Many of us service men, during the big war, noted the curse of alcohol. It made for folly and inefficiency of all sorts, large and small. We note the same thing now in our civilian life. It is intensified by the low physical standard of many and the semi-destitution of women and children and the garishness and prosperity unequalled of the makers and sellers of alcohol. Do we really care, in this State of Queensland, for our returned men? We of the hamlet and country town know well who gets the largest share of wage and bonus and gratuity. Is the physical standard of our manhood so good that alcohol can do no hurt to germinal protoplasm? Granted that a section is good, would it not be wise to spread the high standard, to reinforce it, to make all our manhood efficient to hold this land in the sure day of trial?

Let the 1920 Congress of Medicine, unique in its gathering of naval, military and civilian medical men, answer this question. Shall we still go on as before and let alcohol scourge at least a minority of our people, or shall we make it the servant of science for the rightful use of the people? Let Congress answer and Government concur.

Yours, etc.,
F. HAMILTON KENNY.

Crow's Nest, Queensland,
March 10, 1920.

BREECH PRESENTATION COMPLICATED BY HYDROCEPHALUS.

Sir: During the last few weeks I was called to see a woman in labour. The case was conducted as an ordinary breech presentation, till I found it impossible to deliver the after-coming head. As this patient had given birth to living full-time children, the possibility of hydrocephalus occurred to me. My hand could be easily passed up into the uterine cavity, where the wide sutures and large head could be felt. After calling in another practitioner, I perforated the head, when a large quantity of fluid escaped and the collapsed head was easily delivered. The patient made an uninterrupted recovery.

Should it not be easy to pass an instrument along the hollow of the hand, it is recommended to excise one of the arches of one of the cervical vertebræ and pass a gum elastic catheter along the cervical canal and in this way liberate the excess of fluid, when the collapsed skull can be delivered. Your correspondent asks about decapitation in these cases. I think the aftercoming head could be much more easily manipulated when still attached to, than when severed from the trunk. The operation itself is so much more simple, so much quicker, consequently of practically no risk to the mother.

Yours, etc.,
J. W. BLAKE GREAVES, M.B., Ch.M. (Syd.).

Annandale, March 6, 1920.

VENEREAL DISEASES ACT (1918) NEW SOUTH WALES.

Sir: The recent notification of the further postponement of the above Act for another three months is to be greatly deplored, as the venereal diseases problem in the country districts of this State is becoming urgent and any measure to cope with the increasing menace to public welfare of such diseases would be welcome to country practitioners. When one compares the difficulty experienced in pre-war time in collecting, say, half a dozen cases in the previous year for the statistical committee of the Auckland Congress in a country practice and the present startling influx weekly of cases, the increase is remarkabe, especially as the pre-war cases were mostly imported from the cities and of the male sex, while there are many local sources of infection and the patients are of both sexes.

The essential portion to the general public of the Act—its obligation to secrecy—will be greatly nullified by a recent decision of an English judge (*vide British Medical Journal*, January 24, 1920), which if widely known to the public will deal a severe blow to its usefulness.

Whatever the reason for this delay may be, whether political, financial or tardy delay in altering existing hospitals to the requirements of modern treatment, pressure should be brought to bear upon the authorities to obtain a speedy enforcement of this much-needed measure.

Yours, etc.,
March 15, 1920. "RURAL."

Books Received.

CAMBRIDGE PUBLIC HEALTH SERIES: FOOD POISONING AND FOOD INFECTIONS, by William G. Savage, B.Sc., M.D., D.P.H.; 1920. Cambridge: Cambridge University Press; Demy 8vo., pp. 247. Price, 15s. net.

Proceedings of the Australian Medical Boards.

NEW SOUTH WALES.

The undermentioned have been registered under the provisions of the *Medical Act, 1912 and 1915*, as duly qualified medical practitioners:—

Henry Honwink Holland, M.R.C.S., Eng., 1907; L.R.C.P., Lond., 1907; M.B., B.S., Lond., 1908.

Reginald Power, M. B., Bac. Surg., 1914, Univ. Edin., 39 Johnstone Street, Annandale.

Sidney Solomon Roseberry, M.B., Ch.B., Univ. Edin..

James Garnet Sleeman, M.B., Bac. Surg., Univ. Melbourne, 1915, Balranald.

Ralph Stuart Stephenson, M.B., Mast. Surg., 1891; M.D., 1907, Univ. Edin., Charlotte Street, Ashfield.

The undermentioned additional qualifications have been registered:—

John McPherson, M.D., 1918, Univ. Aberdeen.

Arnold William Dean, M.D., 1918, Univ. Sydney.

Francis Brown Craig, F.R.C.S., Univ. Edin..

VICTORIA.

The undermentioned have been registered under the provisions of Part I. of the *Medical Act, 1915*, as duly qualified medical practitioners:—

Nigel Basil Gresley Abbott, M.B., B.S., Adelaide, 1916, Clunes.

Percival James Campbell, M.B., *et* Ch.B., Melb., 1916, 14 Tintern Avenue, Toorak.

William Stuart Hawthorne, M.B. *et* Ch.M., Sydney, 1915, Murrayville.

Harold William Savige, M.B., B.S., Melb., 1918, Morwell.

Robert Milne Wishart, M.B. *et* Ch.B., New Zealand, 1917, 56 Auburn Road, Auburn.

The undermentioned additional qualification has been registered:—

Hibbert Alan Stephen Newton, F.R.C.S., Eng., 1919.

The names of the late Drs. William Irvine Faulkner and Peter Lynch have been removed from the Register.

Medical Appointments.

Dr. Frank T. Wheatland has been appointed Public Vaccinator for the North-Western District of Victoria.

Dr. D. M. Embelton (B.M.A.) has been appointed Officer of Health for the Shire off Glenlyon, Dr. D. D. Browne (B.M.A.) for the Shire of Heytesbury, Dr. J. C. Craig for the North Riding of the Shire of Kowree and Dr. I. M. Wartzki (B.M.A.) for the North-Western Portion of the Shire of Swan Hill, Victoria.

It is announced that Dr. Wahab McMurray (B.M.A.) has been appointed Honorary Dermatologist at the Coast Hospital, New South Wales.

Dr. J. C. Woods (B.M.A.) has been appointed Government Medical Officer at Weston, New South Wales.

Medical Appointments Vacant, etc.

For announcements of medical appointments vacant, assistants, locum tenentes sought, etc., see "Advertiser," page xxvii.

Sydney Hospital: Various Vacancies on the Honorary Medical Staff.

Medical Appointments.

IMPORTANT NOTICE.

Medical practitioners are requested not to apply for any appointment referred to in the following table, without having first communicated with the Honorary Secretary of the Branch named in the first column, or with the Medical Secretary of the British Medical Association, 429 Strand, London, W.C.

Branch.	APPOINTMENTS.
VICTORIA. (Hon. Sec., Medical Society Hall, East Melbourne.)	All Friendly Society Lodges (other than the Grand United Order of Oddfellows and the Melbourne Tramways Mutual Benefit Society), Institutes, Medical Dispensaries and other Contract Practice. Australian Prudential Association Proprietary, Limited. Mutual National Provident Club. National Provident Association.
QUEENSLAND. (Hon. Sec., B.M.A. Building, Adelaide Street, Brisbane.)	Australian Natives' Association. Brisbane United Friendly Society Institute. Cloncurry Hospital.
SOUTH AUSTRALIA. (Hon. Sec., 3 North Terrace, Adelaide.)	Contract Practice Appointments at Renmark. Contract Practice Appointments in South Australia.
WESTERN AUSTRALIA. (Hon. Sec., 6 Bank of New South Wales Chambers, St. George's Terrace, Perth.	All Contract Practice Appointments in Western Australia.
NEW SOUTH WALES. (Hon. Sec., 30.-34 Elizabeth Street, Sydney.)	Australian Natives' Association. Balmain United Friendly Societies' Dispensary. Friendly Society Lodges at Casino. Leichhardt and Petersham Dispensary. Manchester Unity Oddfellows' Medical Institute, Elizabeth Street, Sydney. Marrickville United Friendly Societies' Dispensary. Newcastle Collieries—Killingworth, Seaham Nos. 1 and 2, West Wallsend. North Sydney United Friendly Societies. People's Prudential Benefit Society. Phœnix Mutual Provident Society.
NEW ZEALAND: WELLINGTON DIVISION. (Hon. Sec., Wellington.)	Friendly Society Lodges, Wellington, New Zealand.

Diary for the Month.

Mar. 23.—N.S.W. Branch, B.M.A., Council.
Mar. 25.—S. Aust. Branch, B.M.A., Branch.
Mar. 25.—Q. Branch, B.M.A., Council.
Mar. 25.—N.S.W Branch, B.M.A., return of ballot papers for election of members of the Council.
Mar. 26.—N.S.W. Branch, B.M.A., Annual Meeting.
Mar. 27.—Eastern District Med. Assoc. (N.S.W.), Port Macquarie.
Mar. 31.—Vic. Branch, B.M.A., Council.
Apr. 8.—Q. Branch, B.M.A., Council.
Apr. 9.—Q. Branch, B.M.A..
Apr. 9.—N.S.W. Branch, B.M.A., Clinical.
Apr. 9.—S. Aust. Branch, B.M.A., Council.
Apr. 13.—Tas. Branch, B.M.A..
Apr. 13.—N.S.W. Branch, B.M.A., Ethics Committee.
Apr. 14.—Vic. Branch, B.M.A..
Apr. 14.—North-East. Med. Assoc. (N.S.W.).
Apr. 15.—Vic. Branch, B.M.A., Council.
Apr. 16.—Eastern Suburbs Med. Assoc. (N.S.W.).

EDITORIAL NOTICES.

Manuscripts forwarded to the office of this journal cannot under any circumstances be returned.

Original articles forwarded for publication are understood to be offered to *The Medical Journal of Australia* alone, unless the contrary be stated.

All communications should be addressed to "The Editor," *The Medical Journal of Australia*, B.M.A. Building, 30-34 Elizabeth Street, Sydney. (Telephone: City 2645.)